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School of Dental and
Oral Surgery

See Page 1



June 1975

COLUMBIA

UNIVERSITY BULLETIN

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COLUMBIA UNIVERSITY BULLETIN

School of Dental and Oral Surgery

D.D.S. PROGRAM

POSTDOCTORAL PROGRAMS IN DENTAL SPECIALTIES

DENTAL HYGIENE PROGRAMS

JUNE 1975 ISSUE, WITH INFORMATION APPLYING TO 1975-1977

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CAREERS IN DENTAL HEALTH CARE—CHALLENGE AND OPPORTUNITY*

Edward V. Zegarelli, D.D.S. and Stephen Wotman, D.D.S.

In choosing their life's work, many people seek the opportunity of being able to help others, while at the same time acquiring "the good life." One of the careers that can lead to such opportunities is to be found in the field of dental health care. The importance of oral health to the general health and well-being of the whole person has been well established; and directly related to oral health are appearance, speech, and nutrition. Of particular importance is the fact that the conscientious dental practitioner may detect the early signs of many serious general illnesses. And members of the dental profession work closely with their medical colleagues to monitor many diseases and their treatment.

The dentist is a scientist dedicated to good health; he or she devotes his efforts to preventing, detecting, and treating a huge number and variety of diseases and disorders of the mouth. Moreover, a wide range of knowledge and skills must be acquired to monitor normal growth and development and to lessen pain, as well as to improve the appearance and ability to function of people with defects of the mouth, jaw, or face, caused congenitally or through accident. The dentist is part of a health care team working in the field of oral health care, medicine, and education. Some of the numerous opportunities that are available are in private practice as a general practitioner or dental specialist, as a member of a group practice caring for all health needs, as an educator in dentistry, as an administrator of health care projects formulating national or local health policy, and as a basic or clinical researcher.

The *dental hygienist* may pursue clinical practice in a primarily preventive way, as in the past, or seek opportunities in new fields, such as expanded duties, research, the dental education of schoolchildren and of dental health professionals, health care administration, and many other burgeoning areas. It is probable that in the near future there will also be better opportunities for the dental hygienist to move along the career ladder to the doctoral level.

The *dental assistant* is another valuable member of the dental health care team. Apart from being the dentist's indispensable co-worker, the dental assistant may also learn and perform expanded duties, and being part of a dental health team may encourage him or her to become a dental hygienist or dentist.

Another important person in the oral health team is the *dental laboratory technician*, who provides the technical skills necessary to fabricate the devices needed to restore the function and appearance of people whose mouths have been affected by disease.

This bulletin provides information concerning the basic University programs leading to degrees and certificates in dentistry, the dental specialties, and dental hygiene. Programs in dental assisting and dental laboratory technology are offered in many different locations. Information concerning these latter programs are available from local community colleges or from the local dental societies.

The Columbia University School of Dental and Oral Surgery offers many opportunities in most of these areas. The staff of the School encourage personal visits and will answer whatever questions may arise. A career in dental health care provides an opportunity and a challenge to those concerned with the betterment of health for all people.

*One of a series on career selection and planning.

OBJECTIVES OF THE SCHOOL

The School of Dental and Oral Surgery of Columbia University traces its origins to the year 1852, when the New York State legislature chartered the New York College of Dental Surgery. The College became the School of Dental and Oral Surgery of Columbia University in 1916, when dentistry was recognized as an integral part of the health sciences and dental education as a true university discipline. Many departments of the University contribute to and collaborate in the education of dental, postdoctoral, and dental hygiene students, thereby assuring them a broad foundation for sound professional development. As the guiding educational policy of Columbia University is the constant pursuit of excellence, the primary goal of the School of Dental and Oral Surgery is the preparation of graduates equipped to fulfill their obligations to the individual, to society, and to the profession. Dental education at Columbia has, over the years, provided leadership in the development of dentistry in the United States. Two examples of such leadership are (1) the establishment at Columbia University, in 1920, of the first organization devoted exclusively to research in dentistry; and (2) Professor William J. Geis' major critique of dental education in the United States in 1926, a critique which resulted in the acceptance by dental schools throughout the country of the basic policies and objectives developed at Columbia.

The University, realizing the need for even greater emphasis on the prevention of dental disease, constantly revises the curriculum. The curriculum is designed to increase the student's appreciation of the conceptual basis of dentistry. Adequate preparation for dentistry demands an understanding of broad biological principles integrated with the continually evolving body of scientific information in clinical dentistry and basic dental research. Undergraduate students are exposed to the full spectrum of dental problems as directed observers, and are then introduced to surgical and manipulative procedures, and to methods of diagnosis and prevention, that they must learn to execute with a high degree of competence. Emphasis is on the close relationship between systemic and oral health and disease, on systemic aberrations that affect the oral structures, on diseases of the mouth which may affect other organ systems, and on dental health as an essential component in total health.

Clinical training is broad in its scope. It is designed to produce competence in the recognition of oral disease and disorder, to stress the essential role of prevention in the control of oral disease, to establish the concept of maintaining the oral structures in optimal health, and to develop skill in planning and treatment.

It is necessary that the curriculum be considered only the initial framework for the student's lifetime participation in dental science and art. To this end, the curriculum cultivates in students those habits of independent thought and scholarship that encourage the continual evaluation of new knowledge. Although learning plays a vital role in the students' lives, their future development and attainment are most effectively assured by fostering a spirit of inquiry. Accordingly, there is a constant application of the scientific method, and undergraduate, postgraduate, and dental hygiene students are encouraged to participate in research.

Insofar as the population is rapidly increasing, knowledge of the processes of human growth and development and of the prevention of disease and abnormality must be amplified. In other branches of medicine, preventive research has resulted in an extensive

reduction in infant and child mortality and in a marked increase in the life span of the individual. In dentistry, prevention of dental and oral disease and disorder must be effected in childhood to enable our youth to reach adulthood with complete, healthy dentitions and socially acceptable speech and expression. Also the increased life span presents many new physiological, pathological, and psychological problems which are peculiar to the aged and are open to investigation. In addition to undergraduate education, programs in graduate education and research are essential if these challenges to dentistry are to be met. The Faculty of the School of Dental and Oral Surgery regards high standards in both graduate education and research as prime objectives which follow directly from its objectives in undergraduate education.

Foresight on the part of the founders of the School of Dental and Oral Surgery has provided for the education of auxiliary personnel to augment dental health services. The Division of Dental Hygiene was established as a program of courses for dental hygienists in the same year that the School became part of the University. The dental hygiene programs are designed to educate students toward an appreciation of their role in a professional society, toward an awareness of the ways in which their professional activities involve them in a wide range of value judgments, and toward expertise in clinical skills. Candidates are selected on the basis of scholarship, achievement, and an ability to prepare for leadership positions within the profession. The undergraduate programs in dental hygiene focus on fundamental knowledge and provide a base for graduate education. The graduate program extends and deepens knowledge and practice in a particular area of interest. All programs contribute to the preparation of a liberally educated dental hygienist who understands human and social factors, is expert in clinical skills, and can progress toward a significant and satisfying role within the profession.

A dental auxiliary utilization program trains auxiliary personnel and dental students in the efficient use of auxiliaries. This program also explores new opportunities for the use of auxiliary personnel in an attempt to provide additional services to meet the expanding dental health needs of a growing populations.

The University has realized that to accomplish these objectives requires the selection of students with superior abilities and academic qualifications, acquisition and maintenance of an excellent staff, and constant pursuit of knowledge through an active and diversified research program. Conscious of these needs, the School selects its students with care and maintains small classes, with a favorable ratio of staff to students. This ratio permits individual instruction and a stimulating relationship between student and instructor. The School has, through the years, had a distinguished staff which has demonstrated accomplishment in educational research and professional leadership, and which continues to prepare students for the expanding professional responsibilities of dentistry and the prevention of dental disease.

Programs of Study

D.D.S. PROGRAM

September 1969 marked the inauguration of an exciting new curriculum at the School. All of the basic science courses are now being offered to both dental and medical students in the form of a "core" program. During the first year, the dental student takes all the required basic science subjects except pharmacology and neuroscience (second year). Also in the first year, the dental student is required to take three courses: (1) *Interdisciplinary Correlation D4001-D4002—Introduction to dentistry*, in which the student is exposed to the nature of dentistry and its significance, the means of delivery of dental care, and the kinds of preventive and treatment services which modern dentistry provides; (2) an interdisciplinary course in human behavior which deals with the psychological

aspects of patient care; and (3) a series of correlation clinics consisting of lectures and demonstrations designed to integrate medical and dental clinical subjects with the basic sciences.

The second year is essentially a "core" dental-science year, providing the full range of courses in oral biology, as well as the conceptual basis for the application of modern methods in the recognition, prevention, and treatment of dental disorders. Clinical observation, small group teaching, and frequent seminars provide the second-year student with a comprehensive view of dentistry. The program also includes integrated courses in dentistry (recognition, prevention, concepts of therapy, instrumentation, and clinical observation), as well as a course in psychosocial aspects of dentistry.

The third year is primarily clinical, with training in all phases of dentistry. Emphasis is on correlation of the various dental disciplines with one another and with the basic sciences. Prevention and comprehensive treatment are stressed while technical laboratory procedures are limited. The third- and fourth-year students function as a group, or module, in a setting similar to that of private practice, where total patient care is rendered by each student and supervision is under an interdisciplinary teaching team. This teaching team is supplied by the professional staff of the divisions of Preventive Dentistry, Periodontics, Operative Dentistry, Prosthodontics, and Endodontics. Consultation services are made available by the divisions of Oral Diagnosis, Oral Surgery, and Orthodontics. The postdoctoral programs of endodontics and periodontics serve the undergraduate clinical modules by treating the difficult cases in their specialty areas.

During the fourth year the opportunity to choose electives in special areas of dentistry is made available. In order to increase their ability to view clinical cases in a comprehensive manner, fourth-year students spend time as student preceptors in the clinic and in seminars held in conjunction with underclassmen and the staff. Honors programs in endodontics, orthodontics, orofacial development, pedodontics, periodontics, research, and public health are offered to selected highly qualified students in their fourth year of study.

As a result of the constantly expanding body of knowledge in basic and dental sciences and the need for adequate clinic time, two summer sessions are required: (1) between the second and third years; (2) between the third and fourth years.

Throughout the entire course an effort is made to interrelate the different phases of dental learning by means of "correlative" and "combined" clinics in which the various departments and divisions cooperate in the discussion and demonstration of the same and related problems and thus treat the study of dentistry as a unit rather than a series of isolated branches of learning. At the same time an attempt is made to individualize instruction and to place responsibility as far as practicable upon the student for his own training. This is accomplished by the division of classes into modules and review sessions, and by the comprehensive case method of instruction.

Voluntary participation in research projects of the student's own choosing and in programs under the guidance of members of the faculty is earnestly encouraged. Members of the William Jarvie Society for Dental Research, the undergraduate research and honor society, undertake individual and team projects under the direction of members of the faculty. Lectures on the principles and practice of research are provided for the membership. In addition, students assist in the execution of studies being pursued by faculty members. A limited number of student research fellowships are available for summer work under the direction of the staff. The scope of student research includes critical reviews of the literature, clinical studies in the techniques of the various disciplines of dentistry, and the evaluation of newer therapeutic agents and dental materials. Work in the basic sciences is encouraged. This program is described in this bulletin beginning on page 15.

POSTDOCTORAL PROGRAMS

The School is authorized to grant certificates of training in special branches of dentistry. Study for the certificate of training includes advanced study in the clinical and basic science branches of dentistry approved by the Dean. At present, programs are offered to qualify graduates in dentistry who wish to prepare for specialization in endodontics, orthodontics, pedodontics, and periodontics. These programs are described in this bulletin on page 29.

CONTINUING EDUCATION

Consistent with its belief that a lifetime of learning is necessary for continued competence in the health professions and that dental education must be a continuum which extends throughout the professional career, the School of Dental and Oral Surgery offers a program of short courses of varying lengths on diverse subjects.

These continuing education courses are given at irregular times throughout the academic year and are announced by special brochures, notices in journals, and special mailings.

Courses may range in length from one day to one week, or one evening a week for a semester. They are designed to enable the practitioner to review and continue his or her educational experience in fields where research and its clinical application present constantly changing concepts of prevention, diagnosis, and treatment. These short courses acquaint the participant with the latest advances in the various fields of dentistry.

Inquiries concerning continuing education courses, schedules, and fees should be directed to Director of Continuing Education, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032. Telephone: (212) 579-3865.

PROGRAMS FOR DENTAL HYGIENISTS

Columbia offers a bachelor's and a master's degree in dental hygiene. Candidates for the Bachelor of Science degree are admitted only in September under one of two classifications: Program A, for the student with two years of liberal arts college credit; Program B, for the student with two years of dental hygiene college credit. Candidates for the Master of Science degree are admitted in September, January, or July. The program for the M. S. degree provides advanced education in dental hygiene administration, research, and teaching. Please consult page 51 for details of these programs.

GRADUATE COURSES IN THE BASIC SCIENCES

A limited number of fellowships are available to graduates of accredited dental schools. These fellowships offer opportunity for study in the following basic-science departments of the University: anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. For further information, address the Dean, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032.

COURSES LEADING TO THE DEGREE OF DOCTOR OF PHILOSOPHY

Graduation from accredited dental schools under the present curriculum of four academic years preceded by three acceptable predental college years is considered by the

Graduate School of Arts and Sciences of Columbia University to meet the general requirement for admission. There are additional admission requirements in certain departments. A student who is accepted by the Graduate School as a candidate for the degree of Doctor of Philosophy and who holds the Doctor of Dental Surgery degree from Columbia University may, with the consent of the Dean, offer the work done for the professional degree in lieu of points toward the fulfillment of the residence requirement for the degree. For further information see the bulletin of the Graduate School of Arts and Sciences, which may be obtained by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

PUBLIC HEALTH FOR DENTISTS

A one-year course leading to a Master of Public Health degree is offered by the School of Public Health. The course is open to graduate students in dentistry. For further information regarding course content, registration, and fees, apply to the Director, School of Public Health, Columbia University, 600 West 168th Street, New York, N.Y. 10032.

A joint D.D.S./M.P.H. program is under consideration for the 1975-1976 academic year. For further information consult the Associate Dean for Academic Affairs, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032.

Facilities

THE DENTAL CLINIC

The School benefits in many ways by its association with the Medical Center. One of the functions of its clinic is the dental care of patients in the Center hospitals. Students are given a unique opportunity to gain experience in the diagnosis and care of those cases where a relationship exists between oral and general systemic diseases. The student also learns at first hand the problems of providing dental care for the hospitalized patient. The wards and outpatient departments of the Center give close contact and association with all branches of the health services.

THE LIBRARY

The Health Sciences Library occupies parts of the three lower floors in the College of Physicians and Surgeons building. It provides current literature, both books and journals, for faculty members and students, and it aids in research through its own collection of current and historical works and through its unique bibliographic service. The Augustus C. Long Health Sciences Center Library currently under construction will house all library facilities and an audio-visual center.

The Health Services Library contains approximately two hundred ninety-five thousand volumes of books and journals, some five thousand pamphlets, and about two thousand slides on the history of medicine. More than forty-five hundred periodicals are received regularly. A professional library staff is available to aid students, faculty members, and research workers in medicine, dentistry, nursing, public health, and the hospitals of the Medical Center.

The libraries on the Morningside campus, which contain over four million books, periodicals, and documents, are open to all students. The main collection is housed in Butler Library, while special departmental collections are in various other buildings on

the campus. They include collections on biology, chemistry, psychology, sociology, and other subjects related to dentistry and supplement the special collections available in the Health Sciences Library. Books may be borrowed for home use.

The Health Sciences Library is open Monday through Friday, 8:30 a.m. to 11 p.m.; Saturday, 9 a.m. to 5 p.m.; and Sunday, 12 noon to 10 p.m., during the academic year. All other libraries post their hours.

KEY TO COURSE LISTINGS

Each course number for the School of Dental and Oral Surgery consists of a capital letter followed by four digits and the term designation.

The capital letter indicates the School of Dental and Oral Surgery.

The level of the course is represented by *the first digit*:

- 3 Dental hygiene undergraduate course
- 5 First-year course for D.D.S. degree candidates
- 6 Second-year course for D.D.S. degree candidates; dental hygiene graduate course
- 7 Third-year course for D.D.S. degree candidates
- 8 Fourth-year course for D.D.S. degree candidates
- 9 Postdoctoral course

D.D.S. DEGREE PROGRAM

In the D.D.S. degree program, the *second and third digits* indicate the subject area:

- 00 - 04 Interdisciplinary correlation
- 05 - 09 Preventive dentistry
- 10 - 14 Community health
- 15 - 19 Dental auxiliary utilization
- 20 - 29 Endodontics
- 30 - 34 Operative dentistry
- 35 - 39 Oral biology
- 40 - 44 Oral surgery
- 45 - 49 Orofacial growth and development
- 50 - 59 Orthodontics
- 60 - 69 Pedodontics
- 70 - 79 Periodontics
- 80 - 84 Prosthodontics
- 85 - 89 Psychiatry
- 90 - 94 Dental science (core course)
- 95 - 99 Dental science (interdepartmental course)

POSTDOCTORAL PROGRAMS

In the postdoctoral programs, the *second digit* indicates the course category:

- 0 Interdisciplinary correlation
- 2 Endodontics
- 5 Orthodontics

- 6 Pedodontics
- 7 Periodontics
- 9 Dental science (core and interdepartmental courses)

DENTAL HYGIENE PROGRAMS

In Program A, the subject area is indicated by *the second digit*:

- 0 Basic science
- 1 Dental science
- 2 Education
- 3 Public health
- 4 Clinical dental hygiene

In Program B, the subject area is indicated by *the second and third digits*:

- 52 Dental science
- 54 Education
- 56 Public health
- 58 Clinical dental hygiene

Points of Course Credit: The number of points of credit that a course carries is given in boldface type in the right margin of the course-title line.

TERM DESIGNATIONS: X, Y, Z

An *x* following the course number indicates the course meets in the autumn term; a *y* indicates the spring term; and a *z* indicates the summer session.

THE D.D.S. PROGRAM

ADMISSION REQUIREMENTS

SUMMARY OF THE D.D.S. PROGRAM

COURSES OF INSTRUCTION

ADMISSION REQUIREMENTS

All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex. Candidates should apply after July 1 during the academic year preceding that for which they seek admission. Application is made through the American Association of Dental Schools Application Service (AADSAS), Box 1103, Iowa City, Iowa 52240. Forms enabling an individual to participate in this Service may be obtained from the Committee on Admissions or any other participating dental school.

Each application must be accompanied by a check or money order for \$20, made payable to Columbia University, to cover the cost of processing the application. This fee is required of all prospective students and should be sent direct to the School of Dental and Oral Surgery. Payment may be waived, but only in certain individual cases of extreme hardship. Those wishing to be considered for a fee waiver on this basis should consult with the Committee on Admissions and should supply the information necessary to support the waiver request. An application for admission cannot be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the School. The fee is not refundable and is not credited toward tuition.

Required preparation: three full years at an acceptable college of arts and sciences, including the following courses (8 points of each): English composition and literature, physics, biology, inorganic chemistry, and organic chemistry.

Recommended preparation: additional courses in chemistry, advanced courses in biology, courses in mathematics, foreign languages, sociology, history, and the fine and industrial arts. It is not necessary to complete the academic requirements before applying, but all requirements must be completed before registration. The admission of a student depends primarily on his preparation and intellectual capacity, but it also depends upon judgments of his character and health. Preference is given to applicants with bachelor's degrees from accredited colleges of arts and sciences.

DENTAL APTITUDE TESTS

All applicants must take the Dental Aptitude Tests, which are conducted by the Council on Dental Education at various testing centers throughout the United States and Canada. For further information, apply directly to the Division of Educational Measurements, Council on Dental Education of the American Dental Association, 211 East Chicago Avenue, Chicago, Ill. 60611.

ACCEPTANCE FEE

Within one month after receiving notice of acceptance, the applicant must notify the Committee on Admissions that he or she intends to enroll and must send a check or money order for \$200 made payable to Columbia University. The acceptance fee is applied to the applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.

COMBINED COURSES

With Barnard College. Under the "professional option" plan, students from Barnard College may receive the Bachelor of Arts degree from Barnard after the completion of three years of undergraduate work and the first year in the School of Dental and Oral Surgery. To be eligible for this privilege, before entering the School the student must have completed at Barnard 90 points of academic work (including all specific requirements), a major of 28 points, and the major examination or thesis.

With the School of General Studies. Students from the School of General Studies may exercise the professional option after the completion of 94 points (including all courses prescribed for the Bachelor of Science degree), not less than 64 of which must have been taken at Columbia University.

SUMMARY OF THE D.D.S. PROGRAM

Because of revisions in curriculum, the following outline reflects the tentative program for the years 1975 - 1977.

FIRST YEAR

Anatomy 101F, 102F-102S, 108F
Biochemistry 101F
Interdisciplinary correlations D5001-D5002

Microbiology 101S
Pathology 101S
Physiology 101F
Psychiatry D5851-D5852

SECOND YEAR

Anatomy 206F
Community health D6101
Endodontics D6201
Interdisciplinary correlations D6001-D6002
Operative dentistry D6301
Oral biology D6351-D6352, D6361, D6371-D6372
Oral surgery D6401, D6402
Orofacial development D6451, D6452, D6453, D6454

Orthodontics D6501
Pedodontics D6651
Periodontics D6701
Pharmacology 250
Preventive dentistry D6051, D6052
Prosthodontics D6801
Psychiatry D6851
Stomatology D6901

THIRD YEAR

Community health D7101, D7102
Dental auxiliary utilization D7151
Endodontics D7201-D7202
Operative dentistry D7301-D7302
Oral biology D7351, D7361
Oral surgery D7401-D7402, D7411
Orthodontics D7501

Pedodontics D7651-D7652
Periodontics D7701-D7702
Preventive dentistry D7051-D7052
Prosthodontics D7801-D7802
Stomatology D7901-D7902, D7911-D7912, D7921, D7931, D7941-D7942, D7943-D7944

FOURTH YEAR

Community health D8111-D8112*
Dental auxiliary utilization D8151-D8152, D8161-D8162*
Endodontics D8201-D8202, D8211-D8212*
Operative dentistry D8301-D8302
Oral surgery D8401, D8410-D8411
Orofacial development D8451-D8452, D8461-D8462*

Orthodontics D8511-D8512*
Pedodontics D8661-D8662*
Periodontics D8701-D8702, D8711-D8712*
Preventive dentistry D8061-D8062*
Prosthodontics D8801-D8802
Stomatology D8901-D8902†, D8911-D8912*

* Elective courses

† Identical to *Stomatology D7901-D7902*

HONORS PROGRAMS

Honors programs are available to qualified fourth-year students in the following areas: biological sciences, endodontics, orofacial development, orthodontics, pedodontics, periodontics, and public health.

REQUIRED SUMMER CLINICS

These sessions are held in June and July.

COURSES OF INSTRUCTION**ANATOMY****Anatomy 101F. Microscopic anatomy**

Professor Noback and staff. First year. (Formerly *Anatomy 150*)
Lectures, conferences, and laboratory.

Anatomy 102F-102S. Human Anatomy

Professor Moss and staff. First year. (Formerly *Anatomy 151*)
Regional dissections of the complete body, augmented by lectures stressing *functional* interpretations. Lectures correlate developmental anatomy with gross anatomy.

Anatomy 108F. Introduction to embryology

Professor Hoar and staff. First year. (Formerly *Embryology 101*)

Anatomy 206F. Neuroscience

Professors Carpenter, Kandel, and Rowland, and staff. Second year.
An interdisciplinary course designed to provide an integrated background in anatomy, behavior, biochemistry, and neurobiology.

BIOCHEMISTRY**Biochemistry 101F. Principles of biochemistry**

The staff. First year. (Formerly *Biochemistry 150*)
A survey of the chemical constituents of the mammalian cell and their metabolic activities; energy production in the cell, and its role in the synthesis of biological macromolecules; biosynthesis of nucleic acids and proteins; regulation of nucleic acid and protein synthesis.

COMMUNITY HEALTH**Community Health D6101x. Epidemiology**

Second year. (Formerly *Community Health 202*)
Lectures, seminars, and fieldwork in epidemiology and its role in disease prevention and community health. Major focus on dental and oral disease.

Community Health D7101y. Health care systems and dental practice

Third year. (Formerly *Community Health 301*)
Lectures in organization and financing of health care. Overview of public and private sectors of dental care, with emphasis on third party insurance, group practice models, peer review and PSRO, manpower, jurisprudence, and projected programs.

Community Health D7102y. Extramural program

Third year. (Formerly *Community Health 301*)

Students are assigned to community health programs to observe and participate in the delivery of dental care under a variety of local settings: neighborhood health centers, county health departments, and other agencies are utilized.

Community Health D8111x-D8112y. Public health-community dentistry elective

Fourth year. (Formerly *Community Health 450-451*)

Tutorial seminars for selected students from the School of Public Health, the M.S. degree program in the Division of Dental Hygiene, and senior dental students. Emphasis on quality and utilization of dental care, prepaid group practice, and other advanced topics dealing with the provision of dental care to large population groups.

DENTAL AUXILIARY UTILIZATION**Dental Auxiliary Utilization D7151y. D.A.U.**

Professor D. Kaplan and staff. Third year. (Formerly *Dental Auxiliary Utilization 300*)

Lectures, demonstrations, and clinical experience in four-handed, sit-down dental service delivery; the effective utilization of chairside dental assistants; patient and dental team positioning; sequential instrumentation; equipment and space criteria.

Dental Auxiliary Utilization D8151x-D8152y. D.A.U.

Professor D. Kaplan and staff. Fourth year. (Formerly *Dental Auxiliary Utilization 400-401*)

Lectures and office visits present an introduction to dental practice management, the various systems of private practice, and dental economics. This section of the course prepares the student in the essentials of establishing, managing, and maintaining a dental practice. Advanced techniques are provided in clinical assignments.

Dental Auxiliary Utilization D8161x-D8162y. T.E.A.M. elective

Professors Kafer and Handlers, and staff. Fourth year. (Formerly *Dental Auxiliary Utilization 450-451*)

Lectures, seminars, and clinical experience in the principles and practices of management of expanded function auxiliaries.

ENDODONTICS**Endodontics D6201y. Endodontics theory and technique**

Professors Leavitt, Naidorf, and Moreinis, and staff. Second year. (Formerly *Endodontics 232*)

Lectures and seminars on the fundamentals of endodontics. Demonstrations and exercises in endodontic technique on extracted teeth.

Endodontics D7201x-D7202y. Basic clinical endodontics

The staff. Third year. (Formerly *Endodontics 335-336*)

Demonstrations and clinical experience in the practice of endodontics on selected single-rooted teeth.

Endodontics D8201x-D8202y. Advanced clinical practice

Professor Moreinis and staff. Fourth year. (Formerly *Endodontics 436-437*)

Lectures and clinical experience in advanced problems in endodontic theory and technique.

Endodontics D8211x-D8212y. Endodontics elective

Professor Greenfield and staff. Fourth year. (Formerly *Endodontics 450-451*)

Seminars, demonstrations, and clinical experience in advanced endodontic theory and technique.

INTERDISCIPLINARY CORRELATION

Interdisciplinary Correlation D5001x-D5002y. Introduction to dentistry

Professor Halpert and staff. First year. (Formerly *Introduction to Dentistry 100-101*)

Lectures, demonstrations, clinical observation, and experience designed to define the scope of dentistry early in the career of the dental student. Correlation between the preclinical and clinical disciplines is an integral part of the course content.

Interdisciplinary Correlation D6001x-D6002y. Introduction to dentistry

Professors Duboff and Fine, and staff. Second year. (Formerly *Introduction to Dentistry 200-201*)

Lectures, demonstrations, clinical observation, and experience designed to permit the second-year student to experience the newly developing curriculum as early as possible. The course begins to supply the background needed to utilize fully the modifications in emphasis and course content in the ensuing clinical training.

MICROBIOLOGY

Microbiology 101S. Biology of bacterial and mammalian cells

The staff. First year. (Formerly *Microbiology 151*)

Laboratory and conferences.

OPERATIVE DENTISTRY

Operative Dentistry D6301y. Introductory operative dentistry

Professors Boelstler, Brzustowicz, and Scrivani, and staff. Second year. (Formerly *Operative Dentistry 231*)

Lectures and laboratory exercises on the fundamentals of operative dentistry, including the etiology of dental caries and the biological approach to the technical procedures in the restoration of teeth. Periods of clinical observation are an integral part of the course.

Operative Dentistry D7301x-D7302y. Operative clinical practice

Professors Cain, Boelstler, Brzustowicz, Pandolfo, Scrivani, and staff. Third year. (Formerly *Operative Dentistry 333-334*)

Introduction to the clinical practice of operative dentistry. Lectures, demonstrations, and clinical experience in the recognition of disease and related conditions. Prevention, treatment planning, and restoration to form and function on a comprehensive care basis.

Operative Dentistry D8301x-D8302y. Advanced clinical practice

Professors Cain, Boelstler, Brzustowicz, Pandolfo, and Scrivani, and staff. Fourth year. (Formerly *Operative Dentistry 434-435*)

A continuation of *Operative Dentistry D7301-D7302*, with the addition of seminars in the special problems of operative dentistry, with emphasis on total patient care.

ORAL BIOLOGY

Oral Biology D6351x-D6352y. Biology of the oral tissues

Professor Morris and staff. Second year. (Formerly *Oral Biology 210-211*)

Lectures and seminars intended to supplement the more general information and concepts of the first-year basic science courses with specific material related to dentistry. Topics include the biochemical nature of the oral tissues and secretions, neuromuscular mechanisms involved in mastication and deglutition; special sensation; pain; oral microcirculation; and the microbiological, viral, and immunological aspects of oral disease.

Oral Biology D6351x. Oral microscopic anatomy and embryology

Professor Moss-Salentijn and staff. Second year. (Formerly *Oral Biology 200*)

Lectures, conferences, and laboratory on the detailed microscopic anatomy and development of the dental and associated orofacial structures.

Oral Biology D6371x-D6372y. Oral pathology

Professor Blake and staff. Second year. (Formerly *Oral Biology* 246-247)

Lectures, demonstrations, conferences, and laboratory work on diseases of the jaws, teeth, and soft tissues about the oral cavity. Emphasis on clinical manifestations of the various diseases.

Oral Biology D7351y. Functional anatomy of the head and neck

Professor Crikelair and staff. Third year. (Formerly *Anatomy* 352)

A concise review of the functional interrelationships in this region and their dynamic significance. Pertinent clinical topics are analyzed.

Oral Biology D7361y. Temporomandibular joint disorders

Professor Marbach. Third year. (Formerly *T.M.J.* 484)

Lectures and clinical demonstrations on the diagnosis and treatment of diseases and disorders of the temporomandibular joints.

ORAL SURGERY**Oral Surgery D6401x. Pain control**

Professors Marder and Stern, and staff. Second year. (Formerly *Surgery* 200)

Lectures and demonstrations in the understanding of pain and its control by means of local anesthesia and sedation.

Oral Surgery D6402y. Introduction to oral surgery

Professors L. Mandel, Minervini, and Baurmash, and staff. Second year. (Formerly *Surgery* 201)

Lectures and demonstrations to prepare students for basic clinical oral surgery.

Oral Surgery D7401x-D7402y. Basic oral surgery

Professors L. Mandel, Minervini, and Loscalzo, and staff. Third year. (Formerly *Surgery* 300-301)

Lectures and demonstrations in minor oral surgery. The principles of oral surgery are considered as applied to the total oral surgical environment followed by clinical application of these principles.

Oral Surgery D7411x. Pain control

Professors Schube and Winner. Third year.

Lectures and demonstrations in pain control utilizing sedation, analgesia, and general anesthesia.

Oral Surgery D8401y. Clinical clerkship at Roosevelt Hospital and Bronx Veterans Administration Hospital

Professors Karmioli, Linz, and Loscalzo. Fourth year. (Formerly *Surgery* 403)

Assignment of students to Roosevelt Hospital and Bronx Veterans Administration Hospital supervised by the hospital dental service.

Oral Surgery D8410x-D8411y. Clinical practice of basic oral surgery

Professors L. Mandel and Minervini, and staff. Fourth year.

No grade given. Opportunities to perform the more advanced clinical procedures in ambulatory oral surgery.

OROFACIAL GROWTH AND DEVELOPMENT**Orofacial Development D6451x. Oral anatomy and occlusion**

Professors Lighter and Horowitz, and staff. Second year. (Formerly *Orofacial Development* 201)

Lectures and laboratory sessions in oral anatomy, dental morphology, phylogeny of the dentition, and dental occlusion.

Orofacial Development D6452x. Growth and development of the dentition

Professor Horowitz. Second year. (Formerly *Orofacial Development 202*)

Lectures in the development of the dentition, including embryogenesis, timing and sequence of calcification, eruption, development of occlusion, and changes in the dentition with age.

Orofacial Development D6453x. Human genetics in dentistry

Professors Applebaum and Horowitz. Second year. (Formerly *Orofacial Development 203*)

Lectures designed to familiarize the student with principles of Mendelian heredity, cell division, inborn errors of metabolism, chromosomal anomalies, and the genetics of orofacial syndromes.

Orofacial Development D6454x. Statistics

Miss Diserens. Second year. (Formerly *Orofacial Development 204*)

Lectures and programmed instruction in basic biostatistics, including measures of central tendency, regression, correlation, Chi-Square, and comparison of samples.

Orofacial Development D8451x-D8452y. Treatment of the handicapped program

Professor Horowitz and staff. Fourth year. (Formerly *Orofacial Development 410-411*)

Lectures and clinical experience in treating patients who have various types of handicapping conditions.

Orofacial Development D8461x-D8462y. Orofacial development elective

Professor Horowitz and staff. Fourth year. (Formerly *Orofacial Development 450-451*)

An individualized study program in child development, with special emphasis on growth patterns of the dentofacial complex. The child development laboratory provides an opportunity for student experience in research design, exploration of genetic factors in dental anomalies and disease, practical applications of statistical analytic techniques, and clinical observation of various craniofacial birth defect syndromes.

ORTHODONTICS**Orthodontics D6501y-D7501x. Principles of orthodontics**

Professor Di Salvo and staff. Second and third years. (Formerly *Orthodontics 341-342*)

Lectures, seminars, laboratory, and clinic. Orthodontic fundamentals, with special emphasis on prevention of malocclusion by the early recognition and correction of the predisposing factors. Appliances used in preventive, interceptive and minor corrective orthodontic procedures are constructed in the laboratory and used in the clinic.

Orthodontics D8511x-D8512y. Orthodontic elective

Professor Di Salvo and staff. Fourth year. (Formerly *Orthodontics 450-451*)

Seminars and clinic participation. A more detailed exposure to the etiology, diagnosis, case analysis, treatment planning, and clinical management of problems of malocclusion.

PATHOLOGY**Pathology 101S. General and special pathology**

Professors Blanc, Branwood, Cowen, Duffy, Gambino, Godman, King, Lane, Lattes, Pirani, Richart, and Vogel. First year. (Formerly *Pathology 150*)

The same course as that given to medical students, including lectures, seminars, and laboratories, with emphasis on gross and microscopic examination of tissues, correlated with clinical findings.

PEDODONTICS

Pedodontics D6651y. Fundamentals of pedodontics and preventive dentistry

Professors Rocco and Rosenstein, and staff. Second year. (Formerly *Pedodontics 201-202*)

Preclinical training. Lectures on the role of pedodontics in preventive dentistry; applied anatomy and principles of operative procedures for primary teeth; and mean ages of various stages of normal dental growth and development.

Pedodontics D7651x-D7652y. Theory and practice of pedodontics

Professors Rocco and Rosenstein, and staff. Third year. (Formerly *Pedodontics 301-302*)

Lectures and clinical training in factors involved in treatment planning and complete dental care for children, including child patient management, special procedures for pulp therapy, management of traumatized teeth, and application of preventive dentistry for children.

Pedodontics D8661x-D8662y. Pedodontic elective

Professors King, Rocco, Rosenberg, Rosenstein, and Wolmer. Fourth year. (Formerly *Pedodontics 450-451*)

Clinical practice in dentistry for children with more complicated management problems than those seen in the third year. Assignments to special clinic and affiliated facilities for training with special inpatients and outpatients. Weekly seminars for case presentation and discussion of advanced pedodontic problems.

PERIODONTICS

Periodontics D6701y. Lectures and clinic

Professor Gottsegen and staff. Second year. (Formerly *Periodontics 201*)

Lectures and seminars in the diagnosis, etiology, and treatment of periodontal diseases. Clinical practice in examination and documentation of clinical findings in the periodontal patient, prophylaxis, subgingival scaling and root planing, teaching and motivating patients to perform personal oral hygiene. The fundamentals of preventive periodontics are covered.

Periodontics D7701x-D7702y. Clinical practice of periodontics

Professor Gottsegen and staff. Third year. (Formerly *Periodontics 300-301*)

Lectures and seminars on periodontal surgery, occlusal traumatism, selective tooth grinding, specific periodontal diseases and infections, systematic background factors and interrelationships, methods of temporary stabilization of teeth, introduction to treatment planning, and case presentation both in seminar and clinic. Clinical practice in subgingival curettage, simple surgical techniques, occlusal adjustment by selective grinding, and temporary stabilization.

Periodontics D8701x-D8702y. Advanced periodontics

Professor Gottsegen and staff. Fourth year. (Formerly *Periodontics 400-401*)

Clinical experience is a continuation of *Periodontics D7702*.

Lectures and seminars tracing the historical development of treatment methods, advanced surgical techniques, special therapeutic problems, fixed and permanent splinting, and restorative dentistry for the periodontally involved dentition. A review of periodontal histopathology related to clinical experience, treatment planning, case management, and case presentation. Emphasis on the clinical management of more complex cases than are seen in the third year.

Periodontics D8711x-D8712y. Periodontics elective

Professor Gottsegen and staff. Fourth year. (Formerly *Periodontics 450-451*)

One seminar and choice of one, two, or three clinic sessions a week. Students participate in seminars with subject material researched through literature review and critical analysis. Clinic experience is directed toward enlarging and enhancing the usual four-year periodontics program through the assignment of difficult and complex cases of diagnosis, treatment planning, and therapeutic management. Opportunity and encouragement given for research.

PHARMACOLOGY

Pharmacology 250F. Introduction to pharmacology

The staff. Second year.

Lectures on a wide variety of drugs. The effects of many of these drugs on man and other mammals are demonstrated in the laboratory. Emphasis on general pharmacological principles to assist the student in the rational use of drugs and in the evaluation of new remedies as they may be introduced.

PHYSIOLOGY

Physiology 101F. Human physiology

Professor Nocenti and staff. First year. (Formerly *Physiology 150*)

Lectures, conferences, demonstrations, and laboratory. The function of the various organ systems of the mammalian body and their interrelations.

PREVENTIVE DENTISTRY

Preventive Dentistry D6051x. Principles of preventive dentistry

Professor I. D. Mandel and staff. Second year. (Formerly *Preventive Dentistry 200*)

Lectures and seminars on the etiology, histopathology, and prevention of the plaque diseases—caries and periodontal diseases.

Preventive Dentistry D6052y. Laboratory and clinical exercises

Professors I. D. Mandel, Wotman, and Zengo, and Dr. Weinstein. Second year. (Formerly *Preventive Dentistry 201*)

The techniques for studying plaque, calculus, saliva, and gingival fluid. Preventive aspects of malocclusion and oral lesions; nutrition and dietary analysis; patient education and motivation for prevention.

Preventive Dentistry D7051x-D7052y. Practice of preventive dentistry

Professor Fine and staff. Third year. (Formerly *Preventive Dentistry 300-301*)

Clinical training in the procedures of preventive dentistry, with emphasis on the plaque diseases.

Preventive Dentistry D8061x-D8062y. Preventive dentistry research elective

Professor I. D. Mandel and staff. Fourth year. (Formerly *Preventive Dentistry 450-451*)

Seminars and research.

PROSTHODONTICS

Prosthodontics D6801y. Preclinical prosthodontics

Professors Lucca and Uccellani, and Dr. Vero, and staff. Second year. (Formerly *Prosthodontics 200*)

Lectures and demonstrations on theory and procedures in the fabrication of fixed, removable, and complete prostheses. Wherever necessary for the learning of manipulative skills in preparation for clinical objectives, procedures are carried out on models in the laboratory by the student.

Prosthodontics D7801x-D7802y. Core clinical prosthodontics

Professor Lucca and staff. Third year. (Formerly *Prosthodontics 300-301*)

Lectures, demonstrations, and clinical experience in the biological principles and practice of the more simple cases in all phases of prosthodontics—fixed and removable dentures.

Prosthodontics D8801x-D8802y. Advanced prosthodontics

Professor Lucca and staff. Fourth year. (Formerly *Prosthodontics 400-401*)

Lectures, demonstrations, seminars, and advanced clinical experience in the biologic principles and practice of fixed and removable dentures. Lectures on different concepts of occlusion and

other schools of thought on various aspects of prosthodontics including maxillofacial prosthesis are given by the staff and guest lecturers.

PSYCHIATRY

Psychiatry D5851x-D5852y. Human behavior

Professors Justman, Shain, Wotman, Ms. Essig, and staff. First year. (Formerly *Psychiatry 100-101*)

Psychosocial aspects of dentistry. Seminars and demonstrations.

Psychiatry D6851y. Human behavior

Professors Justman, Shain, Wotman, Ms. Essig, and staff. Second year. (Formerly *Psychiatry 200*)

Psychosocial aspects of patient care. Seminars concerning student-patient relationships.

STOMATOLOGY

Stomatology D6901x. Diagnosis and radiology lectures

Professors Donovan and Budowsky, and staff. Second year. (Formerly *Diagnosis and Radiology 200*)

Lectures and discussions on history, physics, and electronics of radiology; studies on radiobiology, radiotherapy, radiation hazards, and protections; radiographic techniques and processing. Fundamentals of radiographic interpretation; diagnosis of pulpal diseases and associated abnormalities.

Stomatology D7901x-D7902y. Clinical stomatology conferences

Professors E. V. Zegarelli, Marder, Kutscher, and D. J. Zegarelli, and staff. Third year. (Formerly *Diagnosis 300-301*)

Required for third-year and postdoctoral students, but other students and members of the staff are urged to attend. Presentation by students of case histories of patients with diseases of the mouth and jaws which are of diagnostic interest and importance. General discussion of each case by and with the audience is encouraged.

Stomatology D7911x-D7912y. Diagnosis lectures and clinic

Professors E. V. Zegarelli, Marder, and D. J. Zegarelli, and staff. Third year. (Formerly *Diagnosis 312-313*)

Lectures and discussions on diagnostic methods and techniques, diseases of the maxilla and mandible, tumors of the mouth, and diseases of the soft tissue. Clinical practice in mouth examination, taking of histories, diagnosis of mouth and jaw diseases, and treatment planning.

Stomatology D7921y. Clinical cancer training

Professors E. V. Zegarelli, Kutscher, and Marder, and staff. Third year. (Formerly *Diagnosis 310*)

Lectures and clinical experience in the diagnosis and treatment of tumors of the head, face, and neck. The student is rotated for one week through the otolaryngology, radiotherapy, dermatology, and maxillofacial prosthesis clinics. Operating room experience in the surgical management of tumors is included.

Stomatology D7931y. Radiology clinic

Professors Donovan and Budowsky, and staff. Third year. (Formerly *Radiology 367*)

Clinical practice in intraoral and extraoral radiography; demonstrations of temporomandibular joint panoramic and laminographic techniques.

Stomatology D7941x-D7942y. General survey of medicine

Professor Cosgriff and staff. Third year. (Formerly *Medicine 378-379*)

The important aspects of internal medicine, with reference to fundamentals as well as to recent diagnostic and therapeutic advances. Particular emphasis on overall medical problems and their implications for dentistry.

Stomatology D7943x-D7944y. Treatment of diseases of the mouth

Professors E. V. Zegarelli, Marder, and Kutscher. Third year. (Formerly *Oral Medicine 386-387*)

Lectures on the management and treatment of selected diseases of the mouth and jaws, including choice of drugs, models of administration, contraindications, and side reactions. The systemic implications of orodental therapy, the dental management of systemically ill patients, and other medicodental relationships are emphasized.

Stomatology D8901x-D8902y. Clinical stomatology conferences

Fourth year. (Formerly *Diagnosis 400-401*)

The same course as *Stomatology D7901-D7902*.

Stomatology D8911x-D8912y. Oral diagnosis, medicine, pathology, and surgery elective

Professors E. V. Zegarelli, L. Mandel, Minervini, and D. J. Zegarelli. Fourth year. (Formerly *Stomatology 450-451*)

Elective course for a limited number of students.

An integrated program of advanced clinical training and experience in allied fields of diagnosis/oral medicine, oral pathology, and oral surgery.

**FOR VISITORS AND VISITING SCHOLARS TO THE
SCHOOL OF DENTAL AND ORAL SURGERY**

D5045x and y. Auditing dental and dental hygiene education at Columbia

Qualified students are offered the opportunity for guided study, attendance, and observation of clinical and classroom education under the direction of a faculty member for variable periods of the school year not necessarily corresponding to regular academic intervals. Faculty members of other institutions may be granted visiting scholar privileges, which include auditing clinic and classroom courses (as approved by the course instructor), attending lectures and participating (with the approval of the appropriate faculty member) in seminars.

This course is offered without credit. A special fee is determined after consultation with the Director of Continuing Dental Education, depending on the courses to be audited and the length of time to be spent in attendance. No official records of attendance are kept. No transcript certifying attendance or work undertaken is provided by the registrar.

Arrangements for enrollment are made directly with the Director of Continuing Dental Education.

POSTDOCTORAL PROGRAMS IN DENTAL SPECIALTIES

ADMISSION REQUIREMENTS

SUMMARY OF PROGRAMS

COURSES OF INSTRUCTION

**FELLOWSHIP AND POSTDOCTORAL
PROGRAMS IN BASIC SCIENCES**



ADMISSION REQUIREMENTS

To be admitted to any program, an applicant must be licensed to practice dentistry. All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex. Foreign students may be required to demonstrate sufficient knowledge of English and pass a clinical competence examination.

When to apply: before January 1, for admission in the following September. The Postdoctoral Admissions Committee gives preference to applicants who present evidence of one of the following qualifications: (a) two years of experience in dental practice (service as a dental officer in the federal services fulfills this qualification); (b) completion of an internship of twelve months or more; or (c) completion of at least twelve months of university graduate or postgraduate work in dentistry, a basic science, or an allied field.

Admission procedure: use the application form attached to this bulletin or write to the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032, for an application form, which must be filled out and returned. The completed form should be accompanied by the application fee of \$20. This fee is required of all prospective students. Payment may be waived, but only in certain individual cases of extreme hardship. Those wishing to be considered for a fee waiver on this basis should consult with the Postdoctoral Admissions Committee and should supply the information necessary to support the waiver request. An application for admission cannot be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the School. The fee is not refundable and is not credited toward tuition. As requested in the form, the applicant should ask each of the colleges or universities attended—for both preprofessional and professional studies—to send official transcripts of the record direct to the director of the postgraduate division to which the applicant is seeking admission. Official proof of current licensure should also be submitted.

Personal interview: if practicable, the Postdoctoral Admissions Committee may ask an applicant to come to the School for a personal interview.

Acceptance fee: within two weeks after receiving notice of acceptance, the applicant must notify the Committee that he or she intends to enroll and must send a check or money order for \$200 made payable to Columbia University. The acceptance fee is credited to the applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.

SUMMARY OF POSTDOCTORAL PROGRAMS

These programs lead to a board-qualifying certificate of training and are based on the need for specially qualified practitioners of dentistry. They provide opportunities for advanced study in special fields. The education received may be credited toward specialization.

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time.

Program in Endodontics

A two-year, full-time program designed to prepare dentists for specialized practice in endodontics. Included are lectures, seminars, and laboratory courses in the basic sciences as well as in endodontics and related areas of dentistry. Clinical demonstrations, instruction, and experience in all phases of operative endodontics—conservative and surgical—are provided. Participants also receive experience in undergraduate endodontic teaching and in research.

Complete descriptions of the following courses are given on pages 39-47.

FIRST YEAR

AUTUMN TERM

- D9900. Research methodology
- D9200. Theory and practice of endodontics
- D9204. Endodontic anatomy and technic
- D9205. Clinical practice in endodontics
- D9210. Review of endodontic literature
- D9905. Oral medicine and clinical oral pathology
- D9907. Clinical stomatology conferences
- D9911. Functional anatomy of the head and neck (*alternate years*)
- D9913. Radiology
- D9217. Surgical endodontics
- D9915. Psychiatry and psychosomatic medicine, and their interrelationship with dentistry
- D9951. Periodontal wound healing seminars
- D9920. Histology and embryology
- D9921. Statistics
- D9922. Physiology

SPRING TERM

D9201, D9206, D9211, D9906, D9908, and D9218 are offered in the spring term of the first year. They are continuations of courses offered in the autumn term.

- D9901. Cariology
- D9214. Endodontic bacteriology
- D9912. Anatomy of the head and neck
- D9215. Endodontic-periodontic relationships
- D9914. Theory and practice of periodontics
- D9923. Pharmacotherapeutics (*alternate years*)

SUMMER SESSION

Endodontics D9209. Clinical practice in endodontics

SECOND YEAR**AUTUMN TERM**

D9202, D9207, D9211, D9219, and D9909 are offered in the second year. They are continuations of courses offered in the first year.

- CT336. Pulp biology
- D9220. Thesis

SPRING TERM

D9203, D9208, D9213, D9220, D9222, and D9910 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9952. Periodontal wound healing seminars
- D9923. Pharmacotherapeutics (*alternate years*)

Program in Orthodontics

A two-year, full-time program designed to prepare dentists for specialization in orthodontics. Instruction in the basic and applied sciences, in related medical subjects, and in the theory and practice of orthodontics is provided by lectures, seminars, laboratory exercises, and clinical practice. Emphasis is on diagnostic procedures and treatment planning and the application of clinical methods best designed to meet the treatment objectives for the individual patient.

Instruction includes the theory and practice of treatment with various appliances: removable, labiolingual, twinwire, extraoral forces, edgewise, and the Begg Appliance. Satisfactory completion of clinical training under the direction of members of the orthodontic staff is required.

See the Academic Calendar for registration dates and for dates on which classes begin. Complete descriptions of the following courses are given on pages 39-47.

FIRST YEAR**AUTUMN TERM**

- D9900. Research methodology
- D9956. Introduction to orthodontics

- D9500. Orthodontic technic
- D9501. Clinical orthodontic practice
- D9515. Orthodontic literature review
- D9507. Biomechanics
- D9957. Cephalometrics, growth and development
- D9958. Orthodontic diagnosis and treatment planning
- D9521. Theory and practice of orthodontics
- D9511. Dental anthropology and evolution
- D9907. Clinical stomatology conferences
- D9911. Functional anatomy of the head and neck
- D9913. Radiology
- D9920. Histology and embryology
- D9921. Statistics
- D9922. Physiology
- D9519. Dental materials

SPRING TERM

D9502, D9512, D9516, D9522, D9908, and D9959 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9901. Cariology
- D9903. Orofacial growth and development
- D9525. Thesis
- D9912. Anatomy of the head and neck
- D9914. Theory and practice of periodontics
- D9919. Genetics
- D9923. Pharmacotherapeutics (*alternate years*)

SUMMER SESSION

D9503 and D9526 are offered in the summer session. They are continuations of courses offered in the spring term.

SECOND YEAR

AUTUMN TERM

D9527 is offered in the autumn term and is a continuation of a course offered in the summer session; *D9909* is offered in the second year and is a continuation of a course offered in the first year.

- D9904. Craniofacial anomalies
- D9504. Clinical orthodontic practice
- D9517. Orthodontic literature review
- D9916. Temporomandibular joint disorders
- D9917. Temporomandibular joint dysfunction and maxillofacial rehabilitation
- D9523. Theory and practice of orthodontics
- D9509. Orthodontic diagnosis and treatment planning
- D9905. Oral medicine and clinical oral pathology
- D9915. Psychiatry and psychosomatic medicine, and their interrelationship with dentistry

SPRING TERM

D9505, D9510, D9518, D9524, D9528, D9906, D9910, and D9918 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9902. Pediatrics related to dentistry
- D9508. Practice management in orthodontics
- D9513. Public health aspects of orthodontics
- D9514. Oral and maxillofacial surgery related to orthodontics
- D9960. Maxillofacial follow-up clinic
- D9955. Speech pathology and therapy
- D9520. The cleft-palate patient
- D9923. Pharmacotherapeutics (*alternate years*)

SUMMER SESSION

D9506 and *D9529* are offered in the summer session. They are continuations of courses offered in the spring term.

Program in Pedodontics

DENTISTRY IN CEREBRAL PALSY AND OTHER HANDICAPPING CONDITIONS

A two-year, full-time program which includes courses in the applied basic sciences, nutrition, and developmental psychology, and dental and medical courses in various aspects of pedodontics and cerebral palsy as well as other handicapping conditions. During the second year there is emphasis on complete dental service for inpatients and outpatients. Participation in a research study related to pedodontic dentistry for the handicapped is required during the second year. Emphasis is placed on the application of preventive dentistry concepts and procedures and on growth and development. Utilization of the dental assistant is incorporated into clinical practice sessions.

A United Cerebral Palsy Clinical Fellowship may be available during the second year of this program; the fellowship carries an annual stipend and is sponsored by the United Cerebral Palsy Research and Educational Foundation, Inc.

Complete descriptions of the following courses are given on pages 39-47.

FIRST YEAR**AUTUMN TERM**

- D9900. Research methodology
- D9956. Introduction to orthodontics
- D9957. Cephalometrics, growth and development
- D9958. Orthodontic diagnosis and treatment planning
- D9905. Oral medicine and clinical oral pathology
- D9907. Clinical stomatology conferences
- D9911. Functional anatomy of the head and neck (*alternate years*)
- D9913. Radiology
- D9962. Seminars in periodontics: plaque and calculus
- D9600. Practice of preventive dentistry
- D9602. Clinical practice in pedodontics
- D9963. Plaque and calculus

- D9916. Temporomandibular joint disorders
- D9618. Clinical practice for inpatient and outpatient children at outside affiliated hospitals
- D9960. Maxillofacial follow-up clinic
- D9920. Histology and embryology
- D9921. Statistics
- D9922. Physiology
- D9623. Medicodental aspects of neurological impairment in children
- G4023. Anatomy (Faculty of Pure Science). Structure and function of the nervous system

SPRING TERM

D9959, D9906, D9908, D9601, D9603, D9611, D9961, D9619, and D9624 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9901. Cariology
- D9903. Orofacial growth and development
- D9914. Theory and practice of periodontics
- D9919. Genetics
- D9608. Seminars in advanced pedodontic problems
- D9612. Orthodontics related to pedodontics
- D9613. Conference: dentistry for handicapped patients
- D9905. Speech pathology and therapy
- D9626. Clinical practice in dentistry for children with cerebral palsy
- D9923. Pharmacotherapeutics (*alternate years*)
- G4024. Anatomy (Faculty of Pure Science). Structure and function of the nervous system
- H.P. 4325. (Physical Therapy and Occupational Therapy). Neurological conditions
- P.T. 4322. (Physical Therapy and Occupational Therapy). Clinical psychiatry

SUMMER SESSION

D9604, D9620, D9627, and D9964 are offered in the summer session. They are continuations of courses offered in the spring term.

Dental Science D9964. Dental auxiliary utilization

SECOND YEAR

AUTUMN TERM

D9605, D9609, D9614, D9621, and D9625 are offered in the second year. They are continuations of courses offered in the first year.

- D9904. Craniofacial anomalies
- D9628. Thesis
- D9609. Seminar in advanced pedodontic problems
- D9616. Clinical practice in dentistry for handicapped patients
- D9630. Orthodontic consultation clinic
- D9632. Preventive interceptive orthodontic clinic
- TV3600 (Teachers College). Nutrition and health in school and community
- TP3202 (Teachers College). Developmental psychology: childhood and adolescence

SPRING TERM

D9606, D9615, D9617, D9622, D9629, D9631, and D9633 are offered in the spring term. They are continuations of courses offered in the autumn term.

D9634. Practice management in pedodontics

D9902. Pediatrics related to dentistry

D9923. Pharmacotherapeutics (*alternate years*)

Program in Pedodontics

GRADUATE TRAINING PROGRAM FOR RESEARCH AND TEACHING IN PEDODONTICS AND DENTISTRY FOR HANDICAPPED CHILDREN

A three-year, full-time combined program at the School of Dental and Oral Surgery and at Teachers College. The first two years are equivalent to the certificate of training course in pedodontics (see above).

The third year consists of resident study toward a master's degree at Teachers College, with assignments in the School of Public Health. These include courses in the nature and needs of exceptional children (including the mentally retarded, physically handicapped, emotionally disturbed, and children with neurological, visual, and hearing problems), and training in research methods, analysis, and clinical teaching.

For further information, write to the Office of Postdoctoral Admissions, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032.

Program in Periodontics

A two-year program of courses in the theory and practice of periodontology to prepare the dentist for specialized service. The curriculum also includes instruction in the basic biologic and related medical sciences. Training in the scientific approach to a problem is provided in an intellectual atmosphere of inquiry. Exposure to the application of a variety of therapeutic approaches is offered. The student is encouraged to apply fundamental biological knowledge and judgment to clinical problems. Students are also given an opportunity to assist in clinical instruction of undergraduate dental students. This program is designed to fulfill the necessary education requirements of the American Board of Periodontology for candidacy in a postdoctoral specialty. Full credit is given for all courses that the student completes even though he does not continue into the second year of advanced study.

Complete descriptions of the following courses are given on pages 39-47.

FIRST YEAR

AUTUMN TERM

D9900. Research methodology

D9700. Clinical practice in periodontics

D9905. Oral medicine and clinical oral pathology

D9907. Clinical stomatology conferences

D9911. Functional anatomy of the head and neck (*alternate years*)

D9913. Radiology

D9915. Psychiatry and psychosomatic medicine, and their interrelationship with dentistry

- D9704. Seminars in periodontics
- D9708. Seminars in periodontics: periodontal therapy
- D9962. Seminars in periodontics: plaque, calculus, microbiology, and immunology
- D9720. Treatment planning in periodontics
- D9963. Plaque and calculus
- D9951. Periodontal wound healing seminars
- D9920. Histology and embryology
- D9921. Statistics
- D9922. Physiology
- D9724. Minor tooth movement in periodontics
- D9725. Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics
- D9712. Periodontal surgical conference
- D9727. Histology and histopathology of periodontal structures

SPRING TERM

D9701, D9705, D9709, D9713, D9721, D9726, D9728, D9906, D9908, and D9952 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9901. Cariology
- D9912. Anatomy of the head and neck
- D9923. Pharmacotherapeutics (*alternate years*)

SECOND YEAR

AUTUMN TERM

D9702, D9706, D9710, D9714, D9722, D9953, and D9909 are offered in the second year. They are continuations of courses offered in the first year.

- D9716. Seminars in periodontics: journal club
- D9718. Seminars in periodontics: the social science and cultural background of health care, dentistry and periodontics
- D9729. Restorative dentistry related to periodontics
- D9916. Temporomandibular joint disorders

SPRING TERM

D9703, D9707, D9711, D9717, D9719, D9723, D9730, D9954, and D9910 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9731. Practice management in periodontics
- D9923. Pharmacotherapeutics (*alternate years*)

COURSES OF INSTRUCTION

DENTAL SCIENCE (CORE COURSES)

Dental Science D9900x. Research methodology

Professor Naidorf and staff. (Formerly CT 301)

A general consideration of the philosophy and methodology of basic and applied research, including a discussion of the art of scientific investigation; potential areas of research in the basic sciences and clinical dentistry; the use of the library; the role of statistics; techniques of clinical research; and writing for scientific literature. *One one-hour lecture a week.*

Dental Science D9901y. Cariology

Professor I. Mandel. (Formerly CT 302)

Lectures in the etiology and histopathology of dental caries, including recent advances in caries prophylaxis. *Seven lecture hours.*

Dental Science D9902y. Pediatrics related to dentistry

Professor Lorin. (Formerly CT 310)

A synopsis of pediatrics. Certain peculiarities of growing children of significance in dentistry. The basic concepts and practical aspects of psychological care of children. *One two-hour and one one-hour demonstration a week.*

Dental Science D9903y. Orofacial growth and development

Professor Horowitz. (Formerly CT 312)

Lectures on childhood and adolescent growth; development of the dentition; hereditary and environmental influences on growth; craniofacial malformations; and prediction of facial growth. *Sixteen lecture hours.*

Dental Science D9904x. Craniofacial anomalies

Professor Horowitz. (Formerly CT 313)

Discussion of various craniofacial anomalies, with emphasis on etiology, morphology, development, and clinical management. *Eight seminar hours.*

Dental Science D9905x-D9906y. Oral medicine and clinical oral pathology

Professors E. V. Zegarelli and D. Zegarelli. (Formerly CT 329)

A comprehensive description and discussion of the diseases of the mouth, jaws, and related structures. The application of basic scientific knowledge is emphasized in order to provide a clearer and more practical understanding. *One two-hour lecture a week for thirty-three weeks.*

Dental Science D9907x-D9908y, D9909x-D9910y. Clinical stomatology conferences

Professor Zegarelli and staff. (Formerly CT 330)

These weekly conferences consist of the presentation of case histories by fourth-year students of patients with interesting and challenging diseases of the mouth and jaws. The diagnosis and treatment of each case is discussed by and with the audience, the latter including second-, third-, and fourth-year undergraduate dental students; postdoctoral students; dental hygienists; visiting interns; residents; practitioners; and members of the faculty. *Weekly one-hour conferences.*

Dental Science D9911x. Functional anatomy of the head and neck

Professor Moss. (Formerly CT 331)

Given in alternate years; not given in 1975-1976.

A concise review of the functional interrelations and their dynamic significance. Pertinent clinical topics are analyzed from this viewpoint. *One two-hour session a week.*

Dental Science D9912y. Anatomy of the head and neck

Professor Solimene. (Formerly CT 332)

Lectures and dissection. *Three hours a week for sixteen weeks.*

Dental Science D9913x. Radiology

Professor Donovan. (Formerly CT 334)

The principles of dental x-ray technique, with emphasis on lateral, anteroposterior, sinus, and temporomandibular joint techniques. *Eight two-hour lectures and two three-hour clinical sessions.*

Dental Science D9914y. Theory and practice of periodontics

Professor Gottsegen. (Formerly CT 339)

Four one-hour lectures.

Dental Science D9915x. Psychiatry and psychosomatic medicine, and their interrelationships with dentistry

Professor Lefer. (Formerly CT 340)

Basic concepts of psychodynamics, psychopathology, and psychosomatic medicine presented with clinical material showing their synthesis with dentistry. *Eleven two-hour lectures.*

Dental Science D9916x. Temporomandibular joint disorders

Professor Marbach and staff. (Formerly CT 357)

Lectures, discussions, and demonstrations on the diagnosis and treatment of temporomandibular joint disorders. Includes a study of the clinical physiology and pathology of facial pain, and the relationship between systemic diseases and facial pain syndromes. *Ten one-hour lectures plus demonstrations.*

Dental Science D9917x-D9918y. Temporomandibular joint dysfunction and maxillofacial rehabilitation

Professor Marbach and staff. (Formerly CT 358)

A review of skeletal mechanics of the temporomandibular joint and masticatory musculature in its relations to the head and shoulder girdle. The diagnosis of temporomandibular joint pain in terms of muscle spasm and aberration from normal occlusion. *One one-hour lecture or seminar and one three-hour clinical session a week.*

Dental Science D9919y. Genetics

Professor Rainer. (Formerly CT 360)

Lectures and demonstrations on principles of genetics. *Six hours.*

Dental Science D9920x. Histology and embryology

Professor Moss-Salentijn. (Formerly CT 362)

Growth and development of the jaws and face, and microscopic anatomy of the teeth and surrounding and related tissues of the oral cavity. Application to clinical dentistry. *One one-hour lecture a week for four weeks, followed by one two-hour seminar a week for ten weeks.*

Dental Science D9921x. Statistics

Professor Horowitz. (Formerly CT 363)

A review of fundamental principles in statistics, with emphasis on the interpretation of dental statistics. Some attention to current concepts of caries etiology and control. *Ten one-hour lectures.*

Dental Science D9922x. Physiology

Professors Di Salvo and I. Mandel. (Formerly CT 364)

A review of the physiological principles underlying certain oral functions, with special emphasis on sensory, motor, and secretory activity. *Fifteen one-hour lectures.*

Dental Science D9923y. Pharmacotherapeutics

Professor Kahn. (Formerly CT 378)

Given in alternate years; not given in 1976-1977.

Lectures on the application of pharmacologic principles of therapeutics in dental practice. *Eleven one-hour lectures.*

DENTAL SCIENCE (INTERDEPARTMENTAL COURSES)**Dental Science D9951x-D9952y, D9953x-D9954y. Periodontal wound healing seminars**

Professor Morris. (Formerly CT 356)

The basic principles of wound healing are applied to the special problems of repair presented to dental and periodontal structures. These tissues are studied as they react to the various methods of therapy. *One one-hour seminar a week.*

Dental Science D9955y. Speech pathology and therapy

Professor Mysak. (Formerly CT 370)

Language and speech development in children, and speech pathology and therapy in the patient with oral impairment. *Three two-hour lectures.*

Dental Science D9956x. Introduction to orthodontics

Professor Nahoum and staff. (Formerly CT 304)

Consists of a series of lectures which survey the entire field of orthodontics. Provides the student with background information that is required in order to begin treating patients and prepares him for a more detailed study of laboratory and clinical procedures. *Thirty lecture hours.*

Dental Science D9957x. Cephalometrics: growth and development

Professor Nahoum. (Formerly CT 314)

A survey of growth and development of the dentition and face, including the theory and practice of taking standardized head roentgenograms utilizing a cephalostat, laboratory procedure in the methods of making tracings, and the clinical evaluation of headfilms. *Ten one-hour lectures and four three-hour laboratory sessions.*

Dental Science D9958x-D9959y. Orthodontic diagnosis and treatment planning

Professor Di Salvo and staff. (Formerly CT 317)

One one-hour seminar a week.

Dental Science D9960x-D9961y. Maxillofacial follow-up clinic

Professors Crikelair and Rankow. (Formerly CT 361)

Fifteen two-hour sessions.

Dental Science D9962x. Seminars in periodontics: plaque and calculus

Professors Salkind, Oshrain, and Fine, and staff.

Intensive and critical review of the literature relating to formation, structure, chemistry, and bacteriology of plaque and calculus; leading to and covering the microbiology and immunology of periodontal disease. *One-and-one-half hours a week for twenty weeks.*

Dental Science D9963x. Plaque and calculus

Professors I. Mandel, Siegel, and Weinstein. (Formerly CT 355)

The histologic, bacteriologic, and biochemical aspects of supra- and sublingual plaque and calculus formation are discussed and related to the nature of the salivary and crevicular fluids. *Six two-hour lectures.*

Dental Auxiliary Utilization D9964z. Dental auxiliary utilization

Professor Kaplan.

Modern concepts in dental care delivery systems with emphasis on practice management related to efficient utilization of auxiliaries trained in expanded functions. Dental assistants are assigned to postdoctoral chairside duties providing clinical auxiliary utilization experience.

ENDODONTICS

Endodontics D9200x-D9201y, D9202x-D9203y. Theory and practice of endodontics

Professors Leavitt, Naidorf, and Firdman. (Formerly CT 321)

Lectures and seminars on past and current theory in endodontics and its relation to modern endodontic practice. Guest lecturers will speak on current research developments in the field of endodontics or related disciplines. *Ninety hours.*

Endodontics D9204x. Anatomy and technic of endodontics

Professor Moreinis. (Formerly CT 322)

Lectures and laboratory sessions on the anatomy of roots, pulp chambers, and root canals. Lectures and demonstrations on endodontic armamentarium and materials. Lectures, demonstrations, and technic sessions on the chemo-mechanical preparation and filling of canals of extracted teeth. *Forty-five hours.*

Endodontics D9205x-D9206y, D9207x-D9208y, D9209z. Clinical practice in endodontics

The staff. (Formerly CT 323)

Supervised clinical experience in all phases of operative endodontics. During the second year, instruction and experience teaching undergraduate clinical endodontics is included. *Average of 140 hours a term.*

Endodontics D9210x-D9211y, D9212x-D9213y. Review of endodontic literature

Professors Leavitt, Naidorf, and Firdman. (Formerly CT 324)

Intensive discussion of past and current literature in endodontic and related fields. Reports by students on reading assignments. *One-hundred-ninety hours.*

Endodontics D9214y. Endodontic bacteriology

Professor Naidorf. (Formerly CT 325)

Principles of bacteriology and immunity, with particular reference to applications in aseptic procedures and the control of infection in endodontics. *Lecture: thirty-two hours. Laboratory: forty-eight hours.*

Endodontics D9215y. Endodontic-periodontic relationships

Professor Leavitt. (Formerly CT 335)

The theory and treatment of combined endodontic-periodontic problems. *Ten seminar hours.*

Endodontics D9216y. Pulp biology

Professors Fine, Greenfield, Moss-Salentijn, and Naidorf. (Formerly CT 336)

Normal and pathological pulps. Biological background for pulpal injury, inflammation, and repair. *Sixteen two-hour sessions and demonstrations.*

Endodontics D9217x-D9218y, D9219x-D9220y. Surgical endodontics

Professor Rothenberg and staff. (Formerly CT 337)

Lectures, demonstrations, and clinical experience in problems requiring combined endodontic and surgical treatment. *Lecture: thirty hours. Clinic: eighty hours.*

Endodontics D9221x-D9222y. Thesis

Professor Naidorf. (Formerly CT 319)

The student conducts an investigation dealing with a subject of his choice and approved by the program director concerned. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

ORTHODONTICS

Orthodontics D9500x. Orthodontic technic

Dr. Di Salvo and staff. (Formerly CT 306)

Intensive technical instruction and lectures in the assembling and manipulation on typodonts of

removable, labiolingual, edgewise, extraoral forces, twinwire and Begg appliances, retainers, and bite plates. *Six three-hour sessions a week for eleven weeks.*

Orthodontics D9501x-D9502y and D9503z. Clinical orthodontic practice

Professor Di Salvo and staff. (Formerly CT 307)

Supervised clinical practice in the use of removable, labiolingual, edgewise, extraoral forces, twinwire and Begg appliances, retainers, and bite plates. *Six three-hour sessions a week.*

Orthodontics D9504x-D9505y and D9506z. Clinical orthodontic practice

Professors Di Salvo and staff. (Formerly CT 308)

A continuation of D9501-D9502 and D9503.

Orthodontics D9507x. Biomechanics

Professor Blechman. (Formerly CT 311)

Seven two-hour lectures.

Orthodontics D9508y. Practice management in orthodontics

Professor Ruderman. (Formerly CT 316)

Lectures on the administration of orthodontic practice. *Five two-hour lectures.*

Orthodontics D9509x-D9510y. Orthodontic diagnosis and treatment planning

Professor Di Salvo and staff. (Formerly CT 318)

One one-hour seminar a week.

Orthodontics D9511x-D9512y. Dental anthropology and evolution

Professor Oppenheimer. (Formerly CT 327)

Seminars on growth and development of bone are included. *Fifteen two-hour lectures.*

Orthodontics D9513y. Public health aspects of orthodontics

Professor Huettner. (Formerly CT 342)

Four two-hour lectures.

Orthodontics D9514y. Oral and maxillofacial surgery related to orthodontics

Professor Rankow. (Formerly CT 343)

Practical considerations of unerupted teeth, extreme prognathism, intermaxillary wiring, and cleft-palate cases. *Four two-hour lectures.*

Orthodontics D9515x-D9516y. Orthodontic literature review

Professor Kohler. (Formerly CT 374)

One two-hour seminar a week.

Orthodontics D9517x-D9518y. Orthodontic literature review

Professor Nahoum. (Formerly CT 375)

One two-hour seminar a week.

Orthodontics D9519x. Dental materials

Professor Ayers. (Formerly CT 376)

Lectures and laboratory on the physical and chemical properties of the metals and other materials used in orthodontics and pedodontics, with clinical applications. *Six one-hour lectures.*

Orthodontics D9520x. The cleft-palate patient

Professors Luban, J. Kaplan, Bruno, and Cole. (Formerly CT 377)

Lectures on the various problems in the treatment of the cleft-palate by the orthodontist. Coordination with related specialties is emphasized. *Six two-hour lectures.*

Orthodontics D9521x-D9522y. Theory and practice of orthodontics

Professor Di Salvo and staff. (Formerly CT 379)

Lectures, discussions, and demonstrations, in which theory is correlated with clinical observation and practice. *Three one-hour lectures a week.*

Orthodontics D9523x-D9524y. Theory and practice of orthodontics

Professor Di Salvo and staff. (Formerly CT 380)

A continuation of D9521-D9522. *One one-hour lecture a week.*

Orthodontics D9525y-D9526z, D9527x-D9528y, D9529z. Thesis

Professor Di Salvo. (Formerly CT 319)

The student conducts an investigation dealing with a subject of his choice and approved by the program director. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

PEDODONTICS**Pedodontics D9600x-D9601y. Practice in preventive dentistry**

Professor McKinney and Mrs. Goodrich. (Formerly CT 350)

Conferences and clinical training in the procedures of preventive dentistry, including dietary counseling and patient motivation.

Pedodontics D9602x-D9603y, D9604z, D9605x-D9606y. Clinical practice in pedodontics

Professor Rosenberg. (Formerly CT 351)

Supervised clinical practice in pedodontics and related fields. Management of juvenile patients, particularly the very young, and dental care for children referred from outpatient hospital clinics. In addition to the exercise of broad caries-control measures, emphasis is placed on evaluation of cariogenic factors in rampant cases, and measures for prevention of dental and oral disease and disorder. *Three sessions a week.*

Pedodontics D9607x-D9608y and D9609x. Seminar in advanced pedodontic problems

Professors Rosenberg and Rosenstein. (Formerly CT 352)

Presentation and discussion of severe problems in child patient management, aberrant development and eruption of primary and permanent teeth, tooth conservation in children, and preventive procedures. *One one-hour seminar a week.*

Pedodontics D9610x-D9611y. Pedodontics and preventive dentistry

Professor Rosenstein. (Formerly CT 353)

Lectures and conferences, including reports on pertinent literature and research, and on the theory and practice of pedodontics. *D9610:* child-patient management and treatment planning, measures for control of oral disease and tooth conservation. *D9611:* prevention of disease and disorders of the teeth and surrounding structures, with special emphasis on application of sound preventive measures in treatment planning. *One two-hour seminar a week.*

Pedodontics D9612y. Orthodontics related to pedodontics

Professor Lasoff. (Formerly CT 365)

A survey of orthodontics, classification, diagnosis, growth and development, and treatment planning. Application of cephalometric analysis and the various techniques of treatment are discussed. Seminars and laboratory sessions. *Fourteen one-hour lectures and seven three-hour laboratory sessions.*

Pedodontics D9613y-D9614x and D9615y. Conference: dentistry for handicapped patients

Professors Rosenberg and Rosenstein. (Formerly CT 367)

Weekly conferences concerning the patients seen in the pediatric cerebral palsy clinic. The multi-discipline approach to evaluation and treatment is stressed. *One hour a week.*

Pedodontics D9616x-D9617y. Clinical practice in dentistry for handicapped patients

Professors Green, King, Koster, Rocco, and Rosenstein. (Formerly CT 368)

Assignment to the cerebral palsy clinic for complete dental care of outpatients with cerebral palsy and other conditions. *Five three-hour clinic sessions a week.*

Pedodontics D9618x-D9619y, D9620z, D9621x-D9622y. Clinical practice for inpatient and outpatient children at outside affiliated hospitals

Professors King, Kiriakipulos, Rosenberg, and Wolmer. (Formerly CT 369)

Complete dental care for special children, both inpatient and outpatients. *Two three-hour clinic sessions every week.*

Pedodontics D9623x-D9624y and D9625x. Medicodental aspects of neurological impairment in children

Professor Low. (Formerly CT 371)

Assignment to the pediatric cerebral palsy clinic in order to develop an understanding of the neuromuscular and psychological problems in cerebral palsy and to train students to work with children with cerebral palsy. *One three-hour clinic session a week.*

Pedodontics D9626y-D9627z. Clinical practice in dentistry for children with cerebral palsy

Professors Rosenstein and Green.

Assignment to the cerebral palsy clinic for orientation and clinical practice in the procedures for management of children with cerebral palsy and accompanying conditions. *Eighteen two-hour clinic sessions.*

Pedodontics D9628x-D9629y. Thesis

Professor Rosenstein. (Formerly CT 319)

The student conducts an investigation dealing with a subject of his choice and approved by the director of the division concerned. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

Pedodontics D9630x-D9631y. Orthodontics consultation clinic

Professor Di Salvo and staff.

Pedodontic presentation for orthodontics consultation is reviewed with postdoctoral students and staff of the Division of Orthodontics. *Three-hour rotating clinic in the second year.*

Pedodontics D9632x-D9633y. Preventive interceptive orthodontics clinic

Professors Di Salvo, Nahoum, and Mezza.

Children from all clinics having a problem in growth and development are referred to this clinic for diagnosis and treatment by postdoctoral pedodontics students, or for further referral depending on the scope of the problem. The clinic is staffed by the divisions of Orthodontics and Pedodontics. *Biweekly two-hour sessions all year.*

Pedodontics D9634y. Practice management in pedodontics

Professors Rocco and Rosenberg.

Four one-hour seminars are presented on parent education for acceptance of treatment planning and efficient office procedures, followed by four three-hour site visits to pedodontal offices.

PERIODONTICS**Periodontics D9700x-D9701y, D9702x-D9703y. Clinical practice in periodontics**

Professor Gottsegen, Langer, and staff. (Formerly CT 305)

Clinical experience in diagnosis, treatment planning, and all the phases of periodontal therapy. Exposure to a wide variety of surgical procedures, various occlusal concepts, simple orthodontic procedures, temporary stabilization methods, and grounding in patient management. Emphasis on motivating the patient to practice oral hygiene. *Five clinic sessions a week in the first year and six a week in the second year.*

Periodontics D9720x-D9721y, D9722x-D9723y. Treatment planning in periodontics
Professor Langer and staff. (Formerly CT 354)

Periodontics D9724x. Minor tooth movement in periodontics
Professors Geiger and Hirschfeld. (Formerly CT 366)

The selection of cases and technic for performing minor tooth movements. *One hour of lecture a week.*

Periodontics D9725x-D9726y. Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics

Professors Gabriele and Wasserman. (Formerly CT 373)

One one-and-one-half hour lecture and one seminar a week for one year.

Periodontics D9727x-D9728y. Histology and histopathology of periodontal structures
Professor Moskow. (Formerly CT 383)

Study of microscopic aspects of periodontium in health and disease as they relate to clinical findings. Lectures and laboratory including microprojection. *Two hours a week for one year.*

Periodontics D9729x-D9730y. Restorative dentistry related to periodontics

Professors Lucca, Bruno, Grayson, Goldin, Scarola, Herlands, Hindels, Jutkowitz, and Widrow. (Formerly CT 384)

Restorative dentistry significant to periodontal problems. *One one-hour lecture a week for one year.*

Periodontics D9731y. Practice management in periodontics

Professor Hirschfeld. (Formerly CT 385)

One one-hour lecture a week for eleven weeks.

SEMINARS

The following seminars provide the didactic core of periodontics and are organized as several concurrent and consecutive series devoted to different subject areas. This series is a review of the basic and significant periodontic literature having to do with the biology of the periodontal structures, periodontal disease, and periodontal treatment; it concerns itself with the role of periodontics and the surrounding world.

Periodontics D9704x-D9705y, D9706x-D9707y. Seminars in periodontics

Professor Gottsegen and staff. (Formerly CT 341)

A comprehensive and intimate familiarity with the literature is developed by this extensive seminar program. In addition the ability to read critically, to evaluate, and to present personal case material is engendered. *Three two-hour seminars a week for two years.*

Periodontics D9708x-D9709y, D9710x-D9711y. Seminars in periodontics: periodontal therapy

Professors Monahan, Langer, and staff.

Review of the literature in periodontal therapy. Students become familiar with the historical development of periodontal therapeutic techniques by exploring the literature, reading the classic articles and critically analyzing the pertinent research. *One-and-one-half hours a week for one year.*

Periodontics D9712x-D9713y, D9714x-D9715y. Periodontal surgical conference

Professor Langer and staff. (Formerly CT 381)

Seminars in periodontal surgical problems; literature review, critical analysis, and student case presentation. *One one-and-one-half hour seminar a week throughout the academic year.*

Periodontics D9716x-D9717y. Seminars in periodontics: Journal club

Professor Wasserman.

A seminar series based on selected articles from current journals. Critical analysis of the assigned paper requires search and review of pertinent literature. The objective of this course is to develop habits of critical reading of the scientific literature. *One-and-one-half hours a week for one year.*

Periodontics D9718x-D9719y. Seminars in periodontics: sociocultural and economic aspects of periodontics

Professors Gottsegen, Johnson, and staff.

A series of seminars and discussions in which the historical and ethical background of medicine and dentistry becomes the framework for exploring current socioeconomic issues related to the health professions. This course is based on the belief that the increasing social responsibility demanded of leaders of the health professions requires specialists having broad cultural understanding and strong ethical values as well as advanced technical skill and scientific knowledge. *One-and-one-half hours a week for one year.*

FELLOWSHIP AND POSTDOCTORAL PROGRAMS IN BASIC SCIENCES

In recognition of the need for advanced education in the basic sciences and to qualify graduates in dentistry as teachers and investigators, fellowships are offered for study and research in anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. Fellows are normally enrolled in the Graduate School of Arts and Sciences of the University as prospective candidates for the degree of Doctor of Philosophy.

Appointments are made on a yearly (twelve-month) basis, with opportunity for renewal or extension at the discretion of the chairman of the department in which the student is enrolled. The specific objectives of the program are to furnish more complete preparation for careers in dental education and to offer training in investigation so that research in important unsolved problems indigenous to dental science will be extended. Students may apply also to the United States Public Health Service for financial aid.

Financial aid programs are administered without regard to race, creed, color, national origin, or sex.

The formal instruction is elected from courses offered in the Graduate School of Arts and Sciences, the School of Dental and Oral Surgery, the College of Physicians and Surgeons, and the School of Public Health. Each fellow must formulate and carry out, under supervision, an original investigation. During the period of appointment, he is expected to remain in residence and devote his entire time to study and research. In order to maintain contact with clinical dentistry, he may attend clinics in the School of Dental and Oral Surgery and will be given an opportunity to participate in undergraduate teaching.

FELLOWSHIP APPLICATION

To apply for a fellowship in the basic sciences for dentists, the applicant should obtain, from the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032, an application form which should be filled out and

returned to the same address. He should also arrange for each college or university he has attended to send two official transcripts of his record to the Postdoctoral Admissions Office. A personal interview with the applicant is required. The applicant must be accepted not only by the School of Dental and Oral Surgery but also by the chairman of the specific basic science department within which he wishes to study. Applications may be submitted at any time. Appointments are made as vacancies occur.

ADMISSION TO THE GRADUATE SCHOOL OF ARTS AND SCIENCES

Upon acceptance to a postdoctoral program, the applicant must apply for admission as a regular graduate student in the Graduate School of Arts and Sciences of Columbia University. The admission procedure, and the procedure and dates for registration, including payment of fees, are given in the bulletin of the Graduate School of Arts and Sciences, a copy of which may be secured by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

POSTDOCTORAL TRAINEES IN COMPARATIVE BIOLOGY OF CALCIFICATION

Two qualified applicants may be accepted each year for training under the provisions of a grant in comparative biology of calcification. Such training may or may not lead to the Ph.D. degree, depending on the specific needs and desires of the applicant. Further information may be obtained by writing to Professor Melvin L. Moss, School of Dental and Oral Surgery, who currently holds the grant.

THE DENTAL HYGIENE PROGRAMS

A CAREER IN DENTAL HYGIENE

ADMISSION PROCEDURE

**THE BACCALAUREATE
PROGRAMS**

PROGRAM A

PROGRAM B

THE GRADUATE PROGRAM



A CAREER IN DENTAL HYGIENE

As the need for preventive dental services increases, the spotlight focuses on the dental hygienist. The present and future demands, both national and international, far exceed the number of dental hygienists now available and in training.

The programs in dental hygiene offer excellent preparation for taking advantage of the countless opportunities open to registered dental hygienists in different fields. In private practice the dental hygienist, as a member of the dental health team, provides preventive clinical services and education under the supervision of the dentist.

In compliance with school policies and under the direction of the supervising dentist and the school administrator, the dental hygienist provides clinical services and health education in a program designed to improve and maintain the dental health of school children.

In public health positions the dental hygienist aids in the maintenance of the total health of the community by augmenting the services of the public health dentist in areas of prevention, education, and care.

In industry the dental hygienist provides preventive and health educational services for the beneficiaries of the industrial health programs.

In hospitals, as a member of the total health team, the dental hygienist provides maintenance and preventive services to assist the patient in his attainment of maximum health.

In research, under the supervision of the dentist, the physician, and the basic scientist, the dental hygienist participates in areas of basic and applied research.

The Peace Corps, missionary service, American industries abroad, and dental hygiene schools in Europe all provide openings for young professionals with a desire to expand their horizons in dentistry and dental health.

In whatever field dental hygienists choose to serve, they hold positions of responsibility. They are in constant contact with the dentist, with public health personnel, and with governmental and voluntary health agencies.

Admission Procedure

Prospective applicants may use the application form attached to this bulletin or write to the Division of Dental Hygiene. The completed form should be returned with the application fee to the Admissions Office, Division of Dental Hygiene, with a check or money order for \$20 made payable to Columbia University. This fee is not returned and is not credited toward tuition. Applicants should also ask each of the colleges and universities they have attended to send official transcripts of their academic records directly to the Admissions Committee, Division of Dental Hygiene, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032. Two letters of recommendation from former instructors also must be submitted.

Candidates for the B.S. degree are admitted only in September. Candidates for the M.S. degree and students who are not candidates for a degree are admitted in July, September, or January.

ACCEPTANCE FEE

Within two weeks after applicants have been informed of their acceptance, they must notify the Director that they intend to become degree candidates. A check or money order for \$200, payable to Columbia University, must accompany the applicant's acceptance. If the applicant registers at the next enrollment, the amount of the acceptance fee will be deducted from the tuition for that term. If the applicant does not register, the acceptance fee will not be returned.

ADMISSION TO INDIVIDUAL COURSES

Students who do not wish to become degree candidates may be granted permission to attend a course or courses if they meet the standards of scholarship and attendance required of degree candidates.

PROGRAM A

Admission Requirements

All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex.

1. Applicants must be over eighteen years of age and must have records of good health.

2. Applicants must have completed two years, or 60 semester points, of work in approved colleges or universities, including 6 points of English composition, 2 points inorganic chemistry, 2 points organic chemistry, 4 points of biology, 3 points of sociology, and 3 points of psychology.

3. Applicants must either possess a current Red Cross First Aid certificate or arrange to obtain one before enrolling in the autumn term of the senior year.

4. Applicants whose credentials are acceptable for admission will receive an appointment for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the Alumni in their respective localities.

5. It is suggested, but not required, that applicants take the Dental Hygiene Aptitude Test of the American Dental Hygienists' Association.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points: 65 points of required courses; the remaining points, including the English requirement as determined by the English Placement Test, may be selected from courses offered at the School of Dental and Oral Surgery or in other University divisions.

Courses of Instruction

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

JUNIOR YEAR: AUTUMN TERM

Dental Hygiene D3000x. Human anatomy, I. **2 pts**
(Formerly *DH 28*)

Fundamentals of gross anatomy beginning with the head and neck. Illustrated lectures and demonstrations utilizing specimens.

Dental Hygiene D3033x. Biochemistry. **2 pts**
(Formerly *DH 31*)

A basic course dealing with the chemistry of biological substances and transformations in living organisms. The chemistry of carbohydrates, fats, proteins, nucleic acids, enzymes, vitamins, and hormones is integrated into general discussions of the biochemical processes of the tissues of the oral cavity.

- Dental Hygiene D3067x. Histology.** 3 pts
(Formerly *DH 53*)
Lectures and laboratory work on the animal cell; study of the soft tissues of the oral cavity; drawing from sections of teeth and surrounding tissues under the microscope.
- Dental Hygiene D3084x. Human physiology, I.** 2 pts
(Formerly *DH 32*)
Normal function of the respiratory, cardiovascular, renal and gastrointestinal systems is studied in lectures, demonstrations, and clinical illustrations.
- Dental Hygiene D3100x. Oral anatomy.** 2 pts
(Formerly *DH 29*)
A study of the gross anatomy, morphology, and physiology of the structures of the oral cavity. Emphasis on primary and permanent dentitions and on the masticatory system as a whole.
- Dental Hygiene D3126x. Radiology.** 2 pts
(Formerly *DH 46*)
Elementary electricity, the theory and development of x-rays and x-ray apparatus, and the technique for taking and processing dental x-ray films. Lectures, demonstrations, and practice in operating x-ray equipment.
- Dental Hygiene D3400x. Preventive oral health services, I (lecture).** 2 pts
(Formerly *DH 39*)
Primary preventive services which the dental hygienist may render prior to the inception of oral disease or abnormality. Basic concepts and principles of primary prevention necessary to the conduct of primary preventive oral health services.
- Dental Hygiene D3401x. Preventive oral health services, I (clinic).** 2 pts
(Formerly *DH 39*)
Students spend a total of ten hours each week in a clinical setting working with lab partners and patients.
- Dental Hygiene D3420x. Professionalism in dental hygiene, I.** 1 pt
(Formerly *DH 76*)
Basic study of parliamentary procedure; professional association organization and membership. Monthly meetings of the Junior American Dental Hygienists' Association provide laboratory sessions for the practice of parliamentary procedure.

JUNIOR YEAR: SPRING TERM

- Dental Hygiene D3001y. Human anatomy, II.** 2 pts
(Formerly *DH 28*)
Fundamentals of gross anatomy, beginning with the embryo and continuing through the systems.
- Dental Hygiene D3017y. Microbiology.** 3 pts
(Formerly *DH 30*)
Classification and differentiation of microorganisms, with particular reference to those found in the oral cavity. Methods of sterilization. Fundamentals of immunity. Use of the microscope in the study of oral flora.
- Dental Hygiene D3085y. Human physiology, II.** 2 pts
(Formerly *DH 32*)
The interaction of internal and external environments and their relation to the function of cells and to muscular, circulatory, respiratory, gastrointestinal, and excretory systems.

Dental Hygiene D3113y. Pharmacology. 2 pts

(Formerly *DH 44*)

Orientation to the study of pharmacology as it affects the clinical practice of dental hygiene and dentistry. The particular uses of drugs and antibiotics and the relative value of germicidal agents.

Dental Hygiene D3200y. Methods in oral health education. 2 pts

(Formerly *DH 35*)

Introduction to methods and materials used in teaching oral health to individuals and groups.

Dental Hygiene D3402y. Preventive oral health services, II (lecture). 2 pts

(Formerly *DH 63*)

An introduction to secondary preventive services which the dental hygienist may render after the inception of oral disease or abnormality. Application of basic concepts necessary to the conduct of secondary preventive services.

Dental Hygiene D3403y. Preventive oral health services, II (clinic). 2 pts

(Formerly *DH 63*)

Students spend ten hours each week in a clinical setting that provides preventive oral health services to the public.

Dental Hygiene D3421y. Professionalism in dental hygiene, II. 1 pt

(Formerly *DH 76*)

In-depth study of parliamentary procedure. Students are required to attend all scheduled Junior American Dental Hygienists' Association functions.

TV3600 (Teachers College). Nutrition and health. 2 pts

Newer developments of the science of nutrition and their relationship to health. Practical problems in fulfilling the nutrient needs for persons of different ages and different circumstances of living. Planned to meet the needs of such professional groups as nurses, health educators, science teachers, home economists, and dental hygienists.

SENIOR YEAR: AUTUMN TERM**Dental Hygiene D3138x. Myofunctional therapy (lecture). 2 pts**

(Formerly *DH 55*)

The etiology and symptomatology of oral habits that affect occlusion, mastication, deglutition, facial expression, and speech. Cephalometric roentgenography and photography, and their use in the study of the face, jaws, and cranium. Theory and practice in habit retraining, including interview, examination, data collection and interpretation, and therapy techniques.

Dental Hygiene D3163x. Periodontics. 2 pts

(Formerly *DH 57*)

Discussion of normal periodontium, of etiology and classification of periodontal disease, and of the principles of periodontology. The basic sciences are correlated with the clinical aspects of periodontal disease. Emphasis on preventive measures that are within the scope and responsibility of the dental hygienist.

Dental Hygiene D3175x. Pain control. 2 pts

(Formerly *DH 78*)

Lectures and clinical sessions on basic and current concepts in the administration of local anesthetics.

Dental Hygiene D3268x. Introduction to dental research. 2 pts

(Formerly *DH 59*)

The philosophy, principles, and methods of empirical research as they relate to preventive oral health services provided to the public by the dental hygienist; particular emphasis on the behavioral sciences. Research planning, statistical techniques, and research procedure.

- Dental Hygiene D3350x. Social dental hygiene, I.** **2 pts**
(Formerly *DH 71*)
An ecological approach to community oral health. The role of the dental team in maintaining and improving the state of community health. Demographic, social, and cultural factors influencing communication within the community. Coordination of health care resources in the development of community health. Emphasis on oral health as a part of comprehensive health services.
- Dental Hygiene D3404x. Preventive oral health services, III (lecture).** **2 pts**
(Formerly *DH 64*)
An introduction to oral health services concerned in recent state laws affecting dental practice and the dental hygienist.
- Dental Hygiene D3405x. Preventive oral health services, III (lab).** **1 pt**
(Formerly *DH 64*)
Students spend three hours each week developing competency on the manikin, as a means of acquiring familiarity with dental services recently prescribed by state law.
- Dental Hygiene D3406x. Preventive oral health services, III (clinic).** **2 pts**
(Formerly *DH 64*)
Students spend ten hours each week in a clinical setting that provides preventive oral health services to the public.
- Dental Hygiene D3422x. Professionalism in dental hygiene, III.** **1 pt**
(Formerly *DH 76*)
Career rights and obligations, with consideration given to the individual, the community, and the association. Students are required to attend all assigned Junior American Dental Hygienists' Association functions.
- Dental Hygiene D3546x. Oral health teaching: theory.** **2 pts**
(Formerly *DH 74*)
Designed to increase the students' ability to select and utilize appropriate methods and materials in oral health education for primary and secondary school programs. Students develop a graded oral health curriculum for elementary and secondary schools and prepare a unit of instruction for one specific grade level.
- SENIOR YEAR: SPRING TERM**
- Dental Hygiene D3139y. Myofunctional therapy (clinic).** **1 pt**
(Formerly *DH 55*)
Students spend three hours each week in a clinical setting that provides myofunctional therapy for selected patients.
- Dental Hygiene D3151x. Stomatology.** **2 pts**
(Formerly *DH 56*)
Those diseases which affect the teeth and those in which the teeth and their investing tissues may be factors in systemic disturbances. Students hear clinical pathology cases diagnosed and discussed at bimonthly conferences sponsored by the Faculty of Dental and Oral Surgery.
- Dental Hygiene D3234y. Critique in current dental literature.** **2 pts**
(Formerly *DH 58*)
Critical evaluation of scientific and expository reports. Knowledge in specific areas of interest is expanded through the reading and abstracting of articles in scientific journals. Emphasis on techniques of writing and on the coordination of scientific information in the preparation of a research paper and annotated bibliography.

Dental Hygiene D3351y. Social dental hygiene, II. 3 pts
(Formerly *DH 71*)

Students spend six hours each week in a clinical setting of their own choice, in which they initiate and follow through on simple research projects.

Dental Hygiene D3407y. Preventive oral health services, IV (lecture). 2 pts
(Formerly *DH 65*)

Correlation of basic sciences with the practice of professional oral hygiene.

Dental Hygiene D3408y. Preventive oral health services, IV (clinic). 2 pts

Students spend ten hours each week in a clinical setting that provides preventive oral health services under conditions of optimal efficiency.

Dental Hygiene D3423y. Professionalism in dental hygiene, IV. 1 pt
(Formerly *DH 65*)

Legislation affecting oral health and the careers of dental hygienists. Attendance at all Junior American Dental Hygienists' Association functions is required.

Dental Hygiene D3547y. Oral health teaching: practice. 2 pts
(Formerly *DH 75*)

Students spend three hours each week providing oral health material developed in *DH D3543—Oral health teaching: theory*.

Electives (2 or 3 points).

Chosen with the approval of the adviser.

PROGRAM B

Admission Requirements

All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex.

1. Applicants must be over eighteen years of age and have records of good health.
2. Applicants must have completed two years of dental hygiene education with the average grade of B or better in colleges or universities approved by Columbia University.
3. Applicants must possess a current Red Cross First Aid certificate or arrange to obtain one before enrolling in the autumn term of the senior year.
4. Applicants whose credentials are acceptable for admission will receive an appointment for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the Alumni in their respective localities.
5. Applicants must submit National Board scores when and if available.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points, including the English requirement as determined by the score on the English Placement Examination. At least 35 of the required 70 points must be taken at the School of Dental and Oral Surgery. The remaining 35 points in a chosen area of concentration may be selected from courses offered at the School of Dental and Oral Surgery or in other University divisions.

Courses of Instruction

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

JUNIOR YEAR: AUTUMN TERM

Dental Hygiene D3420x. Professionalism in dental hygiene. 1 pt

Stated under Program A.

Dental Hygiene D3580x. Advanced preventive oral health services, I (lecture). 2 pts

(Formerly *DH 66*)

Analysis and evaluation of the basic concepts and principles of traditional preventive oral health services.

Dental Hygiene D3581x. Advanced preventive oral health services, I (clinic). 1 pt

(Formerly *DH 66*)

Students spend a total of three hours each week in a clinical setting.

An introductory English course. 3 pts

Determined by the student's score on the Placement Test. See the bulletin of the School of General Studies.

Anthropology V1001x or y. Introduction to the study of man. 3 pts
For complete entry, see the bulletin of the School of General Studies.

Fine Arts F1001x or y. Introduction to the arts. 3 pts
For complete entry, see the bulletin of the School of General Studies.

Electives (4 or 5 points).

Chosen from courses in the student's selected area of concentration, and with the approval of the adviser.

JUNIOR YEAR: SPRING TERM

Dental Hygiene D3138y. Myofunctional therapy (lecture). 2 pts
Stated under Program A, senior year, autumn term.

Dental Hygiene D3421y. Professionalism in dental hygiene, II. 1 pt
Stated under Program A.

Dental Hygiene D3582y. Advanced preventive oral health services, II (lecture). 2 pts
(Formerly *DH 67*)
Analysis and evaluation of basic concepts and principles of transitional and advanced functions of dental hygiene.

Dental Hygiene D3583y. Advanced preventive oral health services, II (clinic). 1 pt
(Formerly *DH 67*)
Student spends three hours weekly in clinical setting.

An Introductory English course. 3 pts
Determined by the student's score on the Placement Test. See the bulletin of the School of General Studies.

Electives (7 or 8 points).

Chosen from courses in the student's selected area of concentration, and with the approval of the adviser.

SENIOR YEAR: AUTUMN TERM

Dental Hygiene D3139x. Myofunctional therapy (clinic). 1 pt
Stated under Program A, senior year, spring term.

Dental Hygiene D3422x. Professionalism in dental hygiene, III. 1 pt
Stated under Program A.

Dental Hygiene D3540x. Principles of teaching preventive oral health services (lecture). 3 pts
(Formerly *DH 68*)

Examines the underlying philosophy and changing methodology in teaching oral hygiene. Attention given to the nature of learning, to human growth and personality, and to group dynamics.

Dental Hygiene D3544x. Dental hygiene teaching: theory. 3 pts
(Formerly *DH 72*)

A study of the current principles and methodology utilized in developing and designing a course and subsequent units of instruction in dental hygiene. Emphasis on instructional objectives, teaching methods, and evaluation procedures of significance to dental hygiene classroom instruction.

Electives (9 or 10 points).

Chosen from courses in the student's selected area of concentration, and with the approval of the adviser.

SENIOR YEAR: SPRING TERM

Dental Hygiene D3423y. Professionalism in dental hygiene, IV. 1 pt
Stated under Program A.

Dental Hygiene D3541y. Principles of teaching preventive oral health services (clic). 2 pts
(Formerly *DH 69*)
Students spend six hours each week teaching in a clinical setting.

Dental Hygiene D3545y. Dental hygiene teaching: practice. 4 pts
(Formerly *DH 73*)
Students spend four hours per week teaching, observing and evaluating the course material prepared in *D3544x*.

Electives (9 or 10 points).

Chosen from courses in the students selected area of concentration, and with the approval of the adviser.

Areas of Concentrated Study**DENTAL HYGIENE EDUCATION**

Preparation for first-level clinical teaching in dental hygiene programs. This concentration provides basic understanding of educational philosophy and psychology, teaching methods and materials, and tests and measurements. More than forty courses are available in different departments of Teachers College, Columbia University.

SOCIAL SCIENCE

Preparation for teaching and research in a dental hygiene program. Students acquire a basic understanding of sociology and psychology as well as elementary skills in research methods. Increasing emphasis on social research in health services has created a new field of interest for cooperative effort between behavioral scientists and health workers; this makes it possible for the hygienist with a basic understanding of dental theory to become a useful research assistant in social research as it relates to dental health. Courses for this concentration are given in Teachers College, the School of General Studies, and the School of Dental and Oral Surgery.

BASIC SCIENCE

Preparation for teaching primary and secondary preventive clinical services. Intensive study of the basic sciences prepares students for teaching student dental hygienists to correlate their basic science knowledge with their clinical practice. Courses are offered in the School of General Studies.

PUBLIC HEALTH

To provide students with greater understanding of the role and function of dental hygienists in public health agencies and ways in which they work with health and social agencies in the community. Students are fortunate to have a large number of extramural public health, hospital, medical, and prepayment facilities and organizations in and around New York City for field experience. Courses are given at Teachers College, the School of General Studies, and the School of Public Health.

SPEECH

Preparation for teaching in a dental hygiene program or for transfer to graduate study in speech pathology. Students become familiar with major speech disorders related to dentistry and with the methods of preventing oral and facial defects. Courses are offered at Teachers College, the School of General Studies, and the School of Dental and Oral Surgery.

DENTAL HEALTH TEACHER CERTIFICATION

Preparation for dental health teaching in public school systems. Requirements for permanent dental health teaching certification in New York State are satisfied. Courses are offered at Teachers College and at the School of Dental and Oral Surgery.

NUTRITION

Preparation for the teaching of nutrition at different levels. Attention is given to the development of nutritional programs in various communities, both in this country and abroad. Courses in sciences and related fields are offered at Teachers College and in the School of General Studies.

LIBERAL ARTS

Students who do not wish to concentrate in any of the areas listed above may supplement their dental hygiene courses with liberal arts courses selected according to their background and individual needs. These courses may be taken in the School of General Studies.

THE GRADUATE PROGRAM

The Master of Science degree program in dental hygiene was established in 1952 to fill the demand for graduate education in the field of dental hygiene. This program is designed to prepare candidates for positions in one of the following: dental hygiene education and program administration, community and public health dental hygiene, dental health teaching, or educational and clinical research.

Admission Requirements

1. A bachelor's degree approved by Columbia University.
2. A license to practice dentistry or certification as a dental assistant.
3. National Board scores when and if available.

The admission of students depends primarily upon their academic preparation and capabilities, but it also rests upon judgments of their character and health. All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex.

Degree Requirements

1. Completion of 18 points offered in the School of Dental and Oral Surgery.
2. Completion of 14 elective points taken in the School of Dental and Oral Surgery or other divisions of the University.

Courses of Instruction

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors as may be necessary.

Dental Hygiene D6001x or y. Teaching preventive oral health services; Instruction and evaluation.

5 pts

(Formerly *DH 50MS*)

Applied study of clinical dental hygiene education utilizing the concepts inherent in a basic teaching model: instructional objectives, entering behavior, learning experiences, and evaluation procedures. Emphasis is placed on creating and evaluating clinical learning experiences for students in a preclinical course of study in a dental hygiene curriculum leading to a baccalaureate degree.

Dental Hygiene D6002x or y. Administration.

2 or 3 pts

(Formerly *DH 51MS*)

A broad orientation to administration problems unique to schools for dental hygienists. Students gain practical experience through field visits to nearby dental hygiene schools and do original research in one area of administration. *Weekly 2-hour seminar, field work, and a written report on the administration field visit.*

Dental Hygiene D6003x or y. Curriculum.

2 or 3 pts

(Formerly *DH 52MS*)

Major curriculum issues in higher education; principles and practices in curriculum organization

and development; processes and problems of improving instruction. Special emphasis on dental hygiene curriculum development and evaluation. *Weekly 2-hour seminar, field work, and a written report on a curriculum problem.*

Dental Hygiene D6004x or y. Methods of research, I. 3 pts
(Formerly *DH 53MS*)

Introduction to the philosophy, principles, and methods of scientific inquiry; topics include research planning, techniques of making observations, and analyzing and presenting data. Students have the opportunity to design research projects in clinical, social, or educational settings.

Dental Hygiene D6005x or y. Methods of research, II. 3 pts
(Formerly *DH 54MS*)

Prerequisite: *DH D6004*.

Under the direction of a faculty member, students plan and execute a modest research project. Results of the investigation are presented in a thesis completed one month before the end of the term.

Dental Hygiene D6006x-D6007y. Oral diagnosis. 2 pts each term
(Formerly *DH 55MS*)

Prerequisite: the permission of the chairman of the Department of Stomatology.

A comprehensive description of diseases of the mouth, jawbones, and related structures. *Weekly 2-hour seminar, research paper, and bimonthly clinical pathology conferences.*

Dental Hygiene D6008x or y. Scientific writing and reporting. 2 or 3 pts
(Formerly *DH 56MS*)

A review of current literature in dentistry and related health fields; development of techniques for preparation of abstracts, reviews, and bibliographies on current issues. Editing, editorial styles, evaluation, and graphic interpretation. *Weekly 2-hour seminar, related reading and writing assignments.*

Dental Hygiene D6009x-D6010y or D6009y-D6010x. Professional laboratory experiences in dental hygiene education. 3 pts each term
(Formerly *DH 57MS*)

Internship experience in developing and improving skills in designing, implementing, and evaluating educational experiences in dental hygiene education. Identification of the professional responsibilities of dental hygiene faculty in a democratic philosophy of education.

Dental Hygiene D6011x or y. Advanced periodontics (lecture). 2 pts
(Formerly *DH 58MS*)

Prerequisite: the permission of the department chairman.

Comprehensive study of periodontal disease. Analysis of the science and techniques of periodontics. Clinical experience in scaling and root planing.

Dental Hygiene D6012x or y. Advanced periodontics (clinic). 1 pt
(Formerly *DH 58MS*)

Clinical experience in scaling and root planing.

Dental Hygiene D6013x-D6014y or D6013y-6014x. Basic science foundation for dental hygiene practice. 3 pts each term
(Formerly *DH 59MS*)

Structured observation and student reporting of audited basic science courses provides discussion of the need for and value of the study of basic sciences in the performance of quality dental hygiene service. Under the supervision of their respective basic science instructors, students lead class discussions on the basic sciences and their implications for professional dental hygiene practice.

Dental Hygiene D6015x. Oral physiology.**1 pt**(Formerly *DH 60MS*)

Prerequisite: the permission of the departmental chairman.

A review of the physiological principles underlying certain oral functions, with special emphasis on sensory, motor, and secretory activity.

Dental Hygiene D6016z. Core course in administration, curriculum, and teaching.**7 pts**(Formerly *DH 61MS*)

Offered only during six-week summer session.

Seminar discussions devoted to the organization and administration of dental hygiene programs, curriculum planning, and teaching methodology. Particular emphasis to issues and problems of current importance. *18 hours of seminar each week.***Dental Hygiene D6017x or y. Externship in dental hygiene education.****9 pts**(Formerly *DH 62MS*)Prerequisite: *DH D6016*.Supervised administrative and teaching experiences in dental hygiene schools which cooperate with the dental hygiene program at the School of Dental and Oral Surgery. A written report is required. *Full time, spring term.***Dental Hygiene D6018x-D6019y or D6018y-D6019x. Myofunctional therapy.****2 pts each term**(Formerly *DH 63MS*)

Independent graduate study designed to stimulate investigation into the etiology, symptomatology, and treatment of oral habits that may or may not affect occlusion, mastication, deglutition, facial expression, and speech. Each student selects an area of therapy according to his specific interest, and pursues a related course of inquiry.

Dental Hygiene D6020x or y. Team services for the dental hygienist.**5 pts**(Formerly *DH 64MS*)

Intensive study of the current status of team concepts and services for dental hygiene practice. Lectures furnish background information; and the necessary laboratory experience is provided to develop proficiency in the oral health care delivery system. An independent research paper is required.

REGISTRATION, EXPENSES, AND FINANCIAL AID

REGISTRATION

AUDITING COURSES

REGULATIONS

FEES

ESTIMATED EXPENSES

FINANCIAL AID

HONORS

LIVING ARRANGEMENTS

STUDENT ORGANIZATIONS

LICENSE TO PRACTICE



REGISTRATION, EXPENSES, AND FINANCIAL AID

Registration

Before students may attend classes they must register in person during the registration period (see the Academic Calendar pages 110-115). Registration consists of filling out forms required for University records and payment of fees. Late registration requires the approval of the Dean of the school and payment of a late fee (see page 71).

All students will be asked to give Social Security numbers when registering in the University. Those who do not have a number should obtain one from their local Social Security office well in advance of registration.

Auditing Courses

Certificate and degree candidates in good standing who are enrolled for a full-time program in the current term may audit one or two courses (except during the summer term) in any division of the University (excluding Barnard College and Teachers College) without charge by filing a formal application in the Registrar's Office (P&S, Room 3-412) during the change-of-program period. Applications require (a) the certification of the Registrar that the student is eligible to audit and (b) the approval of the dean of the school in which the courses are offered.

For obvious reasons elementary language courses, laboratory courses, studio courses and applied music courses, and seminars are not open to auditors; other courses may be closed because of space limitations. In no case will an audited course appear on a student's record, nor is it possible to turn an audited course into a credit course by paying the fee after the fact. Courses previously taken for credit may not be audited.

Regulations

According to University regulations, each person whose registration has been completed will be considered a student of the University during the term for which he or she is registered unless the student's connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which he or she is first registered.

The privileges of the University are not available to any student until he or she has completed registration. Since, under the University statutes, payment of fees is part of registration, no student's registration is complete until his or her fees have been paid. A student who is not officially registered for a University course may not attend the course unless granted auditing privileges (see above). No student may register after the stated period unless he or she obtains written consent of the appropriate dean or director.

ATTENDANCE AND LENGTH OF RESIDENCE

A student in good standing may, for a valid reason, be granted a leave of absence by the dean or director of the division of the University in which he is registered.

Students are held accountable for absences incurred owing to late registration.

No degree will be granted to a D.D.S. candidate who has not registered for and attended School of Dental and Oral Surgery courses of instruction equivalent to at least four academic years of full-time work. No advanced standing is granted.

No Dental Hygiene bachelor's degree will be granted to a student who has not registered for and attended Columbia University courses of instruction equivalent to two academic years of full-time work.

Unexcused absences in Dental Hygiene, exceeding the credit of the course (i.e., a 3-point course allows three hours of unexcused absence) will result in a failing grade for the term.

RELIGIOUS HOLIDAYS

It is the policy of the University to respect its members' observance of their major religious holidays. Officers of administration and of instruction responsible for the scheduling of required academic activities or essential services are expected to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the academic calendar. Where scheduling conflicts prove unavoidable, no student will be penalized for absence due to religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and the instructor involved, students and instructors should consult the appropriate dean or director. If an additional appeal is needed, it may be taken to the Provost.

Some of the major holidays occurring on weekdays during the 1975-1976 academic year are:

Monday, September 15	Yom Kippur
Thursday, Friday, April 15, 16	First days of Pesach
Friday, April 16	Good Friday
Wednesday, Thursday, April 21, 22	Concluding days of Pesach

GRADING SYSTEM AND REQUIREMENTS FOR PROMOTION AND GRADUATION

D.D.S. PROGRAM

The following grading system is used: A, excellent; B, good; C, fair; F, failure; YC, year course.

A student may be admitted to the second, third, or fourth year of the dental curriculum only upon recommendation of the officers of instruction under whom he has studied during the preceding year.

The School reserves the right to refuse readmission or promotion to any student who is believed for any reason to be unsuited to the conditions of study in the School.

Students are classified for readmission or promotion under the following categories: (1) recommended for advancement; (2) recommended for readmission to the same class; (3) recommended neither for advancement nor for readmission to the same class.

The degree of Doctor of Dental Surgery will be awarded upon completion of the prescribed curriculum.

THE POSTDOCTORAL CERTIFICATE PROGRAMS

The following grading system is used: A, excellent; B, good; C, fair, F, failure; YC, year course.

To be awarded the certificate of training, a candidate must fulfill the following requirements to the satisfaction of the Postdoctoral Committee. He must:

1) complete the prescribed courses and any required thesis; students wishing to be exempted from any of the prescribed courses may request a placement examination in the discipline involved, and the time made available by such exemptions will be planned and supervised by the Program Director for productive utilization.

2) pass prescribed written, oral, or practical examinations at the end of the period of residence;

3) attend special courses, when assigned, at hospitals or institutions affiliated with Columbia University but separate from the Medical Center;

4) any postdoctoral student receiving marginal grades in more than one subject in any one academic year may be advanced or promoted only upon special action and recommendation of the Postgraduate Committee; and,

5) satisfy the Postdoctoral Committee that he has completed all the specified requirements both clinical and academic for the certificate of training.

DENTAL HYGIENE PROGRAMS

The grading system is as follows: A, excellent; B, good; C, fair; D, minimum passing grade; F, failure.

Failure to obtain a passing grade is sufficient reason for asking a student to repeat the course or to resign. A student who fails to receive a satisfactory grade in any course will be notified and will be required, upon the professor's approval, to take a special examination, for which there is a fee of \$10.

The mark of ABS (authorized absence from an examination) is given by the instructor only with the approval of the Director. If the ABS is not removed by the end of the following term, it will automatically be changed to F.

The mark of INC (incomplete) is given only to a student who has satisfactorily met all but one of the requirements of a course but who has been compelled for reasons beyond his control to postpone certain assigned papers or reports. If the INC is not removed by the end of the following term, it will automatically be changed to F.

ACADEMIC DISCIPLINE

The following statement on student discipline is in the Statutes of the University: "The continuance of each student upon the rolls of the University, the receipt by him of academic credits, his graduation and the conferring of any degree or the granting of any certificate, shall be subject to the disciplinary powers of the University which shall be free to cancel his registration at any time on any grounds it deems advisable."

In the dental hygiene program this discipline is exercised through the Dental Hygiene Faculty Committee, which has an absolute right to terminate a student's candidacy at any time for academic reasons or to deny him or her readmission. A student whose candidacy is terminated is notified in writing by the chairman of the committee. This notice is countersigned by the Dean of the School of Dental and Oral Surgery.

HONOR CODE

Academic and intellectual integrity are accepted principles in the dental profession. An Honor Code, created and administered by the student body, is the formal acknowl-

edgment of this understanding at the School of Dental and Oral Surgery. Each dental student is expected to abide by it.

CONDUCT

All members of the University community, its visitors and guests, are governed by the Rules of University Conduct which apply to all demonstrations, including rallies and picketing, that take place on or at a University facility. It is the student's responsibility to be aware of all provisions, regulations, and procedures contained in the Rules. Copies are available in the Office of the University Senate, 406 Low Memorial Library.

CHANGES IN PROGRAMS OF STUDY (DENTAL HYGIENE)

Once registered, a student may drop or add courses or change sections by filing a formal change-of-program application with the Registrar during the change-of-program period each term (see Academic Calendar pages 110-115). All such changes must first be approved by the student's adviser before submission to the Registrar.

Students may drop courses *after* the change-of-program period by following the same procedure; however, for courses dropped after the last day for change of program in each term, no adjustment of tuition is made. Autumn-term courses may be dropped no later than October 31; spring-term courses no later than March 1. *Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and results in a failing grade in the course.*

Fees

The following fees are prescribed for the D.D.S. program, for each of the postdoctoral programs and the dental hygiene programs. Fees are subject to change at any time at the discretion of the Trustees. Fees for partial programs are assessed by the Registrar as provided by the University statutes. Below are the fees for the 1975-1976 academic year.

For D.D.S. and postdoctoral candidates, the tuition, the student health fee and the health insurance premium are payable in advance and as part of registration.* (These students may choose to pay tuition in two installments, one-half of the tuition is payable at registration in September and the other half is payable in January.)

For dental hygiene candidates, tuition is payable each term in advance and as part of registration.* The health service fee is payable at registration each autumn and spring as indicated below. The annual hospital insurance premium is payable at registration in September.†

If these fees are paid after the last day of registration, they will not be reduced, and a late fee of \$10 will be imposed. Checks for tuition and fees should be made payable to Columbia University.

TUITION

Full-time D.D.S. and certificate students, per academic year:	\$3,750.00
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*However, the newly admitted degree or certificate candidate in the School of Dental and Oral Surgery is required by the School, upon acceptance, to submit an acceptance fee to reserve a place in the entering class. This amount is credited toward tuition when the student registers.

†Candidates for the M.S. degree who are admitted in January pay approximately one-half the annual hospital insurance premium at their first registration.

Full-time dental hygiene students	
Autumn and spring terms, per term	\$1,625.00
Summer session, M.S. program	\$ 756.00
Part-time dental hygiene students, for courses, per point	\$ 108.00

HEALTH SERVICE AND HOSPITAL INSURANCE FEES

Full-time D.D.S. and certificate students per year (September 1-August 31)	
Health Service Fee	\$ 87.00
Hospital Insurance Premium	\$ 71.00
Full-time dental hygiene students	
Health Service fee	
Autumn term	\$ 29.00
Spring term and summer period	\$ 58.00
Hospital Insurance Premium	
Per year (September 1-August 31)	\$ 71.00
Spring term and summer period only	\$ 36.00

The student health service fee contributes to the cost of operating the Student Health Service. The hospital insurance fee pays the annual premium of the Associated Hospital Service of New York. Participation in these programs is compulsory for all full-time students; students who already carry hospital insurance, however, will be charged the health service fee only. Part-time students are encouraged to participate in the combined health plan. Upon payment of additional fees, students can acquire hospital insurance coverage for their dependents and the latter are eligible to receive the benefits of the health service program. Students should consult the Student Accounting Division, 7th floor, Vanderbilt Clinic, for further information on dependent coverage.

The Student Health Service, which holds daily office hours, is on the street level of Bard Haven Tower 1 (60 Haven Avenue).

All entering students are required to have a physical examination at the School of Dental and Oral Surgery Health Service.

APPLICATION FEES AND LATE FEES

Application for admission	\$20.00
For renewal of application for a degree or certificate (see below)	1.00
For late registration	10.00
For late application (or late renewal of application) for a degree or certificate	10.00

FEES FOR REPEATED COURSES

A student who is required to repeat the work for any one year must pay the full tuition and fees.

WITHDRAWAL AND ADJUSTMENT OF FEES

Students in good academic standing who are not subject to discipline will always be given an honorable discharge if they wish to withdraw from the University. Students who decide to withdraw from the University must notify the Dean and the Registrar at once. If they are under twenty-one years of age, their parents or a guardian must first give consent in writing to the Director of the Division of Dental Hygiene.

If a student withdraws from the School, a partial return of the tuition may be author-

ized by the Registrar. Any adjustment of the tuition that the student has paid is reckoned from the date on which the Registrar receives the student's written notification. The student health and hospital fee, application fees, late fees, and special fees are not subject to rebate. Up to and including the second Saturday after the first date of classes tuition will be retained in the following amount:

Full-time study	\$50.00
Part-time study	25.00

After the second Saturday after the first day of classes in the term, the above amount is retained, plus an additional percentage of the remaining tuition (as indicated in the adjustment schedule), for each week, or part of a week, of the term up to the date on which the student's written notice of withdrawal is received by the Registrar.

ADJUSTMENT SCHEDULE

	<i>Minimum Tuition Retained</i>	<i>Percentage of Remaining Tuition Retained</i>
Second Saturday after first day of classes	\$25 or \$50	0
Following week	25 or 50	10
Second following week	25 or 50	20
Third following week	25 or 50	30
Fourth following week	25 or 50	45
Fifth following week	25 or 50	60
Sixth following week	25 or 50	75
Seventh following week	25 or 50	90
Eighth following week	25 or 50	100 (no adjustment)

APPLICATION OR RENEWAL OF APPLICATION FOR DEGREES OR CERTIFICATES

Degrees and Certificates are awarded three times a year—in October, January, and May. A candidate for any Columbia degree or certificate must file an application with the Registrar, Room 3-412, 630 West 168th Street, by the date specified in the Academic Calendar. After the dates specified in the Academic Calendar and until the expiration of the *late* filing period for each conferral date a late fee of \$10 will be charged. Applications received *after* the late filing period will automatically be applied to the next conferral date.

If the student fails to earn the degree by the conferral date for which he or she has made application, the student may renew the application by paying a renewal fee of \$1. A \$10 late fee will be charged for late filing of renewals of application according to the same schedule as for original applications.

REQUESTS FOR TRANSCRIPTS

Transcripts may be requested by writing to the Office of the Registrar, 630 West 168th Street, New York, N.Y. 10032. *Official* transcripts must be sent by the University directly to an official address such as another university, a college, a business firm, or a government agency. However, a student may request that an unofficial transcript (stamped "Student Copy") be sent to him or her. There is a charge of \$2 for each transcript requested except those which are sent between offices of Columbia University. Checks accompanying transcript requests should be made payable to Columbia University.

Estimated Expenses

D.D.S. PROGRAM

The approximate cost of attending the School for an academic year of ten months is as follows:

	<i>Average</i>	<i>Minimum</i>
Tuition and fees for a full program	\$4,100	\$3,900
Room in one of the residence halls	1,000	915
Board in a University dining room	1,050	955

The average and minimum figures for board include the approximate cost of meals not provided under the weekly board plans; holiday periods are not included (see "Living Arrangements," pages 78-79).

In addition, each student should budget for such items as clothing, laundry and dry cleaning, travel, dues to organizations, amusements, and sundries. Those who live at home will probably spend about \$600 for lunches during the year.

Books. The approximate cost of books will be: in the first year, \$230; in the second year, \$330; in the third year, \$290; in the fourth year, \$135. Book lists are posted for each class during registration week. Books may be purchased from the Medical Center Bookstore on the first floor of the College of Physicians and Surgeons. The store is maintained expressly for the convenience of the students and staff of the Medical Center schools and hospitals.

Instruments and Supplies. Each student must buy, from the University the original package outfit of instruments specified in the official instrument list. Unauthorized or incomplete equipment will not be accepted by the instructors. The estimated cost of instruments for students entering in September 1975, will be approximately \$3400 over the four-year period. Arrangements have been made with the Bursar to spread payments evenly over the four-year period. For the 1975-1976 academic year, the following schedule of payments will apply: Entering students will pay \$850 for each of the first three years and the balance in the fourth year. Second-year students will pay \$800 for each of the second and third years and the balance in the fourth year. *Third-year students will pay \$800 for the third year and the balance in the fourth year.* The estimated balance which fourth-year students will have to pay is \$900. Variations in these figures may be necessary because of price fluctuations or new developments. Instruments must be paid for at the beginning of the academic year, but students who can demonstrate their need may borrow from the University or from the Health Professions Loan Program to defray the cost. These are *estimates* and are subject to change. Students are asked *not* to present checks made in advance and based upon these figures.

Microscopes. During the first and second years microscopes are provided by the School for a rental of \$40 a year. If a student prefers to provide his own microscope, he must have it approved by the Department of Anatomy. It is recommended that the microscope be of standard make equipped with: (a) quadruple nose piece; (b) Abbe or variable focus condenser; (c) 4x, 10x, 43x objectives; (d) 96x oil immersion lens; (e) 10x wide field eye piece; (f) mechanical stage; (g) attached lamp; (h) carrying case

The cost of a new microscope ranges from \$500 to \$750, and of a reconditioned microscope from \$200 to \$500. Arrangements for approval and for purchase or rental should be made before registration for the opening term.

Lockers. Each entering student is assigned a locker; he must use a combination lock as prescribed by the School.

POSTDOCTORAL CERTIFICATE PROGRAMS

Since the prices of books and instruments may fluctuate and since it may be necessary for the School to make substitutions because of supply shortages, the figures given below for instruments and books are only approximate.

<i>Program</i>	<i>Tuition</i>	<i>Instruments</i>	<i>Books</i>	<i>Estimated Total</i>
Endodontics	\$7,500	\$ 700	\$150	\$8,350
Orthodontics	7,500	1,500	200	9,200
Pedodontics (cerebral palsy)	7,500	265	125	7,890
Periodontics	7,500	500	175	8,175

IMPORTANT NOTE: According to Treasury decision 6291, under Section 162 of the 1954 Internal Revenue Code, income tax deductions are allowed in many instances for tuition and other educational expenses. Students are referred to the federal ruling on income tax deductions for teachers and other professional people seeking to maintain or improve skills in their employment.

DENTAL HYGIENE PROGRAMS

In addition to the tuition and fees, approximate first-year costs are:

Room and Board	\$1,800-\$2,400
Uniforms and accessories	150
Books	125
Instruments and equipment	250

In addition to the tuition and fees given above, approximate second-year costs are:

Room and board	\$1,800-\$2,400
Books	75
Instruments and equipment	75

Financial Aid

Students may apply for financial aid through the Dean's Office. Grants are awarded only in combination with loans; any student who can demonstrate need is eligible to apply. Application forms are issued by the Dean's Office. Financial aid programs are administered without regard to race, creed, color, national origin, or sex.

Student loans are available on the basis of financial need to full-time Columbia degree candidates to partially cover normal educational and living expenses for the year in which the loan is granted. The University reserves the right to assign the funds from which loans are granted. Students who are United States citizens and residents of states having loan plans are urged to apply to these sources. Federal Health Professions loan funds are also available. To insure an early decision, applications for all loans should be filed for

the autumn term by May 1; for the spring term by December 1. Foreign students should be advised that there is limited funding in all programs.

The heavy schedule of the School makes it difficult for D.D.S. students to undertake outside part-time work during the academic year. If at all possible, other financial arrangements should be made.

NEW YORK STATE SCHOLAR INCENTIVE AWARDS

Any student in the D.D.S. degree program or in the Division of Dental Hygiene who has been a legal resident of New York State for the preceding year is entitled to a Scholar Incentive Award for each term in which he or she is registered as a full-time degree candidate. The amount of this award is based upon the net taxable balance of the student's income and the income of those responsible for his or her support, as reported on the New York State income tax return for the previous calendar year. Further information and application forms may be obtained from The University of the State of New York, The State Education Department, Regents Examination and Scholarship Center, 99 Washington Avenue, Albany, N.Y. 12210.

LOANS

Student loans are available to Columbia University degree candidates on the basis of financial need. These funds may be used for tuition, fees, books and supplies, and subsistence. Unusual or excessive personal expenses that fall outside the normal student budget may not be included. Student loans are not intended to cover the entire cost of attending the University but are meant, rather, to supplement a student's own resources.

Students who wish to apply for loans should first consult the Financial Aid Officer in the Dean's Office.

COLUMBIA UNIVERSITY LOANS

Columbia University loans are open to full-time degree candidates in any division of the University. However, foreign students with "F" or "J" visas are required to provide a co-maker. A co-maker must be a citizen or permanent resident of the United States who has an income or salary within the United States and who is not an employee of the University.

Repayment of a Columbia University loan must begin when a student ceases to be registered as a full-time degree candidate at the University, and may be extended over a period of ten years, so long as the minimum monthly payment does not fall below \$30. Interest is at 3 percent.

NATIONAL DIRECT STUDENT LOANS

These funds are available under the terms of the Higher Education Legislation of 1972. Only degree candidates in the Division of Dental Hygiene are eligible.

Repayment may be postponed for one year following the date that a student ceases to be registered at Columbia and may be extended over a period of ten years, beginning with the date of first payment. Interest is at 3 percent.

STATE LOANS

Legal residents of the State of New York who are degree candidates are eligible to apply for loans guaranteed by the New York Higher Education Assistance Corporation.

Other states have similar loan programs. Further information and application forms may be obtained from the Financial Aid Officer.

ARMED FORCES HEALTH PROFESSIONS SCHOLARSHIP PROGRAM

The Uniformed Services Health Professions Revitalization Act of 1972 (Public Law 92-426) established scholarships for students in the health services. These scholarships have been divided between the Army, Navy, and Air Force, and are awarded to students in medicine, osteopathy, dentistry, veterinary medicine, optometry, podiatry, and clinical psychology at the Ph.D. level.

Basically, the program known as the Armed Forces Health Professions Scholarship Program is as follows: an eligible student applies to one of the three branches of the Armed Forces of his choice. If selected, he is commissioned as a second lieutenant or ensign in the inactive reserve. While in the program, the student receives a monthly stipend, except during an annual 45-day active duty tour, for which he is on full pay. The active duty tour is to be performed at a military hospital or medical center, and is to be arranged in order not to interrupt the student's academic work. If required by the school, arrangements may be made to permit serving the 45-day active duty on campus. In addition, the service pays all tuition, mandatory fees, and related academic expenses of the student. The student incurs an obligation of one year of active commissioned service for each year or fraction of a year of program participation. All participants incur a minimum tour of two years.

For further information concerning the Armed Forces Health Professions Scholarship Program, the student may write one of the following:

U.S. Army

Department of the Army

DASG-PTP

Washington, D.C. 20314

U.S. Navy

Bureau of Medicine and Surgery

Navy Department (Code 3174)

Washington, D.C. 20372

U.S. Air Force

ATC/RSOS

Randolph Air Force Base, Texas 78148

Honors

D.D.S. PROGRAM

Alpha Omega Scholarship Award. A plaque presented to the graduating student (not necessarily an Alpha Omegan) with the highest scholastic average for the four years of dental studies. First awarded in 1949.

American Academy of Oral Medicine. A certificate and a subscription to the *Journal of Oral Medicine*, awarded to a fourth-year student for excellence in this field.

American Academy of Gold Foil Operators. Certificate awarded to a fourth-year student for excellence in gold foil technique.

American Academy of Dental Radiology. A certificate awarded to a fourth-year student for excellence in this field.

American Academy of Periodontology. A student award certificate and a one-year subscription to the journals published by the American Academy of Periodontology, awarded to an outstanding student in periodontics.

American Association of Oral Pathology. A certificate to the graduating student who has shown the most interest, accomplishment, and promise in the field of oral pathology.

American Association of Orthodontists. A certificate awarded to a student showing exceptional interest and special aptitude in orthodontics.

American College of Dentists, New York Section. An award of \$100 and a plaque or scroll. Presented to a third-year student who is a good all-around student, a member of the student section of the American Dental Association, and who exhibits leadership.

American Dental Society of Anesthesiology, Inc. An award certificate and a one-year subscription to *Anesthesia Progress*, awarded to a fourth-year student who has shown outstanding ability or interest in the field of pain control.

American Society of Dentistry for Children. A certificate, one year of membership in the Society, and a one-year subscription to *The Journal of Dentistry for Children*, awarded to a fourth-year student.

Herbert J. Bartelstone Award in Pharmacology. An award given annually to a member of the graduating class of the College of Physicians and Surgeons and a member of the graduating class of the School of Dental and Oral Surgery who have demonstrated exceptional accomplishments in pharmacology.

William Bailey Dunning Award for Excellence in Periodontology. A medal awarded to the graduating student who is the most proficient in periodontology. First awarded in 1957.

Ella Marie Ewell. A medal awarded to the graduating student who is the most proficient in some subject of dentistry.

International College of Dentists, U.S.A. Section. A plaque presented to the graduating student who has shown the most professional growth and development during the years of dental study.

Italian Dental Society Award. An award of \$100 to a graduating student who has demonstrated outstanding scholarship.

Long Island Academy of Odontology. A certificate awarded to a student showing exceptional proficiency in preventive dentistry.

Arthur Merritt Award. A certificate and award of \$50 to the outstanding fourth-year student in periodontics.

Prize for Excellence in Operative Dentistry. A certificate awarded by the staff of the Section of Operative Dentistry to the graduating student who has shown the greatest proficiency in operative dentistry.

Certificate for Excellence in Pedodontics. A plaque awarded to a graduating student for excellence in pedodontics. Established by the Class of 1929.

Psi Omega Fraternity Award. A plaque presented by the Gamma Lambda Chapter to the graduating student who has displayed exemplary professional conduct.

Rowe-Wiberg Medal. An award made by the Association of Dental Alumni to the graduating student who has shown the greatest proficiency in prosthetic dentistry.

Women's Auxiliary to the 11th District Dental Society. An award of \$150 to a deserving fourth-year student who is a resident of the Borough of Queens.

DENTAL HYGIENE PROGRAM

Clinical Proficiency Award. Awarded by the Dental Hygienists' Association of the City of New York to honor the student who demonstrates the greatest proficiency in the clinical practice of dental hygiene. A certificate and payment of dues to cover one year's membership in the American Hygienists' Association, Inc., and its component and constituent associations is provided annually.

Sigma Phi Alpha, Lambda Chapter. Sigma Phi Alpha is a National Honor Society established in schools of dental hygiene to recognize scholarship, service, and character among students. Membership is awarded to the top 10 percent of the graduating class, based on scholastic standing and leadership potential.

The Albert H. Stevenson Medal. Awarded by the Dental Society of the State of New York to an honor student from each of the dental hygiene schools in the State. It commemorates the interest and work of Dr. Stevenson in the field of dental hygiene.

The F. J. Swanson Medal. Awarded since 1920 by Dr. F. J. Swanson to the student who demonstrates excellence in theory and practice.

Living Arrangements

ON THE UNIVERSITY CAMPUSES

The University provides limited housing for undergraduate and graduate men and women who are regularly registered either for an approved program of full-time academic work or for work being done on a doctoral dissertation. The rates below are for the academic year 1974-1975.

MORNINGSIDE CAMPUS

Rates in the residence halls (Harmony, Hudson, John Jay, Johnson, McBain, Ruggles, and 70 Morningside Drive) for single and double rooms range from \$600 to \$900 per person for the autumn and spring terms inclusive with \$782 the average rate. Meals are available in the John Jay or Johnson Hall dining rooms on weekdays when classes are in session. These may be paid for in cash or through subscription to a board plan.

Inquiries from men students should be directed as early as possible to the Residence Halls Office, 125 Livingston Hall, Columbia University, New York, N.Y. 10027. Inquiries from women students should be directed as early as possible to Johnson Hall, 411 West 116th Street, New York, N.Y. 10027.

MEDICAL CENTER

Eli B. White Memorial Residence Hall, located at 419 West 114th Street, is a residence of the School of Nursing, but rooms are also available to men and women (primarily undergraduates) registered in other full-time programs at the Medical Center. Each student occupies a single room. Assignment of rooms is for the term. All undergraduate students are required to pay a comprehensive fee for room and board, which includes breakfast, lunch, and dinner, Monday through Friday, excluding holiday periods. The inclusive fee for the academic year, September through May, is \$1,360; half of which is payable each term at registration. Apply directly to the Director of Student Affairs, School of Nursing, Columbia University, 179 Fort Washington Avenue, New York, N.Y. 10032.

Bard Hall is the residence for students in the College of Physicians and Surgeons, but rooms are also available to unmarried students registered in other full-time programs. Several floors are reserved for women students. The facilities of the Hall include lounges, a dining room and grill, and a swimming pool and gymnasium. The rate for a room is about \$125 a month, including breakfast on weekdays on which the cafeteria is open. Breakfast is not served on holidays or during the regular academic vacation periods of the College of Physicians and Surgeons. A full-board plan for September to June is available. Applications should be submitted as early as possible. Vacancies are filled as they occur throughout the year. Very few rooms become available in September though there are openings in October and November. Entering students are therefore advised that a room assignment would most often *not* coincide with the beginning of the autumn term. Applications and further information will be furnished on request by the Bard Hall Office, 50 Haven Avenue, New York, N.Y. 10032.

Housing for students is available at Bard Haven, 100 Haven Avenue, New York, N.Y. 10032, near the Medical Center. Monthly rates for air-conditioned, unfurnished apartments are about \$250 and up. Twenty-four hour doorman service is provided. Students are urged to apply for an apartment as soon as they apply for admission to the program, as apartments are limited. Requests for further information and application forms should be directed to the Office of University Housing, 400 West 119th Street, New York, N.Y. 10027.

OFF CAMPUS

Students under twenty-one years of age who wish to live off campus must have the written consent of parents or guardian sent to the Office of the Director.

Students who wish to live in furnished rooms or apartments off-campus may consult the Columbia University Registry of Off-Campus Accommodations, McBain Hall, 562 West 113th Street, New York, N.Y. 10025, for information.

International House, a privately owned student residence near the Morningside campus, has accommodations for about five hundred graduate students, both foreign and American. Rates are \$99 to \$128 a month and include a continental breakfast, linen and maid service, and membership and program fees. A cafeteria, recreational facilities, and a varied program are available to members. To be eligible for admission, a student must be at least twenty-one years old and must be registered for at least 12 points or for a pro-

gram of full-time research. Inquiries should be addressed to the Committee on Admissions, International House, 500 Riverside Drive, New York, N.Y. 10027.

Student Organizations and Activities

STUDENT COUNCIL

In accordance with the plan for all schools in the University, the students are organized under a Student Government Association. Through this organization the students have representation on the Columbia University Student Council, and are eligible for participation in the many activities at the Medical Center and on the Morningside campus.

OMICRON KAPPA UPSILON

Epsilon Epsilon chapter of Omicron Kappa Upsilon, national honorary fraternity, was chartered in the School of Dental and Oral Surgery in 1934. The purpose of the fraternity is to recognize and honor a maximum of 12 percent of the members of the graduating D.D.S. class on the basis of scholarship, character, and potential for future professional growth and attainments.

THE WILLIAM JARVIE SOCIETY

The William Jarvie Society for Dental Research is a nonsecret, dental honor society, membership in which is based on scholarship and interest in dental research, and for which second, third, and fourth-year D.D.S. students are eligible. The society was organized in the School of Dental and Oral Surgery in 1920 and named after Dr. William Jarvie because of his wide interest in the promotion of dental research. The society aims to promote the spirit of research among the students.

THE STUDENT DENTAL ASSOCIATION

The Student Dental Association of Columbia University was established in 1960 to provide a professional and social forum in which D.D.S. candidates would participate. The general program of this organization is patterned after the program of local dental societies, in which the graduate dentist makes his contribution to the organized dental profession. The undergraduate dental student is exposed to the democratic process of organization function, policy development, and programming as he meets his responsibility for supporting the program of his association.

JUNIOR AMERICAN DENTAL HYGIENISTS' ASSOCIATION

All students in the Division of Dental Hygiene belong to this association, which meets monthly. The purpose is to foster an interest in the work of the American Dental Hygienists' Association and to prepare students for admission after graduation to full and active membership in the professional organizations.

FOREIGN STUDENTS

The staff of the Office of the Foreign Student Adviser, 106 East Hall, provides advice and counseling to foreign students on such matters as housing, personal and financial problems, and regulations of the United States Immigration and Naturalization Service

(visas, extensions of stay, work permission, temporary departure from the United States, transfer from Columbia to another school, termination of study). Information about the various foreign student clubs at Columbia and about opportunities to attend conferences, travel in the United States, and participation in community and cultural activities may be obtained from this office. Maps of New York City and discount tickets to concerts and plays are available.

The staff of the Office of Foreign Student Admissions, 102 East Hall, provides information and counseling on University admission, advanced standing, English proficiency examinations, and academic placement.

POSTDOCTORAL PROGRAMS

Student organizations in the postdoctoral disciplines are open to membership. The Program Director should be contacted for additional information.

License to Practice Dentistry in New York State

Successful performances in Parts I and II of the examinations given by the Council of the National Board of Dental Examiners are preliminary requirements for licensure in most states of the United States, including New York.

Those seeking licensure solely in New York State may take the final or clinical examinations offered by the Board of Dental Examiners of the State of New York. Successful completion of these examinations entitles the applicant to licensure, assuming the prerequisites of good moral character, citizenship, and declaration of intention of becoming a citizen, are fulfilled. For additional information request a copy of Handbook 10, *Professional Education*, from the Division of Professional Licensing Services, New York State Department of Education, Albany, N.Y. 12201.

It is advisable, however, that candidates for licensure take the clinical examinations offered by the North East Regional Board of Dental Examiners, the content and format of which are identical to those of New York State. Successful completion of these examinations, together with fulfillment of such minor prerequisites as may be required by individual states, permits licensure in the states of Connecticut, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia, and the District of Columbia, as well as New York State.

Additional information, including applications, format of examinations, and examination schedules are available from the North East Regional Board of Dental Examiners, 4645 Deane Avenue N.E., Washington, D.C. 20019.

DENTAL HYGIENE

Graduates of the Division of Dental Hygiene are qualified to take all state and national board examinations.

OFFICERS OF INSTRUCTION

ANATOMY

ACTING CHAIRMAN: Professor Charles R. Noback

Frederic J. Agate. *Associate Professor of Anatomy*
B.A., Columbia, 1932; Ph.D., 1949

Ernest W. April. *Assistant Professor of Anatomy*
B.S., Tufts, 1961; Ph.D., Columbia, 1969

Philip W. Brandt. *Associate Professor of Anatomy*
B.A., Swarthmore, 1952; M.S., Pennsylvania, 1957; Ph.D., Columbia, 1960

Malcolm B. Carpenter. *Professor of Anatomy*
B.A., Columbia, 1943; M.D., Long Island, 1947

William G. Dilley. *Assistant Professor of Anatomy*
B.A., California (Berkeley), 1965; M.A., 1967; Ph.D., 1970

Charles A. Ely. *Associate Professor of Anatomy*
B.A., Washington and Jefferson, 1936; M.S., Hawaii, 1940; Ph.D., Wisconsin, 1948

Marie D. Felix. *Adjunct Assistant Professor of Anatomy*
B.S., American, 1956; M.S., Cornell, 1961; Ph.D., 1962

Ray C. Henrikson. *Assistant Professor of Anatomy*
B.Sc., Massachusetts, 1959; M.Sc., Brown, 1961; Ph.D., 1965

Richard M. Hoar. *Adjunct Associate Professor of Anatomy*
B.A., Dartmouth, 1950; M.D., Kansas, 1956

Mary M. L. Lee. *Assistant Professor of Anatomy*
B.A., Hunter, 1963; M.S., Michigan, 1964; Ph.D., Columbia, 1972

Melvin L. Moss. *Professor of Anatomy and Professor of Oral Biology*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

Letty Moss-Salentijn. *Associate Professor of Dentistry*
D.D.S., Utrecht, 1967

Charles R. Noback. *Professor of Anatomy*
B.S., Cornell, 1936; M.S., New York University, 1938; Ph.D., Minnesota, 1942

Gerald P. Pereira. *Assistant Professor of Anatomy*
B.S., Columbia, 1961; M.Sc., McGill, 1965; Ph.D., 1968

John J. Rasweiler IV. *Assistant Professor of Anatomy*
B.A., Colgate, 1965; Ph.D., Cornell, 1970

S.C. Shen. *Adjunct Assistant Professor of Anatomy*
B.S., Yenching, 1933; Ph.D., Cambridge, 1939

ANESTHESIOLOGY

CHAIRMAN: Professor Henrik H. Bendixen

Henrik H. Bendixen. *Professor of Anesthesiology*
M.D., Copenhagen, 1951

Lester C. Mark. *Professor of Anesthesiology*
M.D., Toronto, 1941

S. H. Ngai. *Professor of Anesthesiology*
M.B., National Central (China), 1944

BIOCHEMISTRY

ACTING CHAIRMAN: Professor Parithychery R. Srinivasan

Reinhold Benesch. *Professor of Biochemistry*
B.Sc., Leeds, 1941; M.Sc., 1945; Ph.D., Northwestern, 1950

Ruth E. Benesch. *Associate Professor of Biochemistry*
B.Sc., London, 1946; Ph.D., Northwestern, 1951

Max A. Eisenberg. *Professor of Biochemistry*
B.A., Brooklyn, 1938; M.S., New York University, 1941; Ph.D., Duke, 1950

Philip Feigelson. *Professor of Biochemistry (assigned to Cancer Research)*
B.S., Queens (New York) 1947; Ph.D., Wisconsin, 1951

Allen M. Gold. *Associate Professor of Biochemistry*
B.A., Chicago, 1950; Ph.D., Harvard, 1955

Dezider Grunberger. *Associate Professor of Biochemistry (assigned to Cancer Research)*
M.Sc., Technical University (Prague), 1950; Ph.D., Czechoslovak Academy of Sciences, 1956; Sc.D., 1968

Ronald L. Hanson. *Assistant Professor of Biochemistry*
B.A., Minnesota, 1965; Ph.D., Wisconsin, 1970

John D. Karkas. *Associate Professor of Biochemistry*
B.A., Thessaloniki (Greece), 1952; Ph.D., Columbia, 1962

Alvin I. Krasna. *Professor of Biochemistry*
B.A., Yeshiva, 1950; Ph.D., Columbia, 1955

Seymour Lieberman. *Professor of Biochemistry (assigned to Obstetrics and Gynecology)*
B.S., Brooklyn, 1936; M.S., Illinois, 1937; Ph.D., Stanford, 1941

Barbara W. Low. *Professor of Biochemistry*
B.A., Oxford, 1942; M.A., 1946; D. Phil., 1948

Richard W. Moyer. *Assistant Professor of Biochemistry*
B.S., Pennsylvania State, 1962; Ph.D., California (Los Angeles), 1967

Maurice Rapport. *Professor of Biochemistry (assigned to Psychiatry)*
B.S., College of the City of New York, 1940; Ph.D., California Institute of Technology, 1946

Lawrence E. Skogerson. *Assistant Professor of Biochemistry*
B.A., Grinnell, 1964; Ph.D., Pittsburgh, 1968

David B. Sprinson. *Professor of Biochemistry*
B.S., College of the City of New York, 1931; M.S., New York University, 1936; Ph.D., Columbia, 1946

Parithychery R. Srinivasan. *Professor of Biochemistry*
B.Sc., Madras, 1946; Ph.D., 1953

DENTAL AND ORAL SURGERY

CHAIRMAN: Professor Edward V. Zegarelli

COMMUNITY HEALTH

ACTING DIRECTOR: Professor William Steibel

Neal Alan Demby. *Associate Clinical Professor of Dentistry*
B.A., Rutgers, 1964; D.M.D., Pennsylvania, 1968

Hilton O. Hosannah. *Adjunct Assistant Professor of Dentistry*
B.S., Howard, 1952; D.D.S., 1958; M.P.H., Columbia, 1970

Leon E. Josey. *Adjunct Assistant Professor of Dentistry*
B.S., Howard, 1954; D.D.S., 1960

Lee Lehrer. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1941; M.P.H., Yale, 1947; M.A., DePaul, 1963; Ph.D., Chicago, 1968

Yale J. Pava. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., New York University, 1946; M.P.H., Columbia, 1970

David A. Soricelli. *Adjunct Professor of Dentistry*
D.D.S., Temple, 1955; M.P.H., Harvard, 1958

Carlton A. Sparks. *Adjunct Associate Professor of Dentistry*
B.S., Tennessee State, 1942; D.D.S., Howard, 1949; M.P.H., Columbia, 1969

William Steibel. *Adjunct Associate Professor of Dentistry*
D.D.S., New York University, 1947

Barry M. Weinberg. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1956; D.D.S., New York University, 1960

DENTAL AUXILIARY UTILIZATION

DIRECTOR: Professor David Kaplan

S. Gerald Cardinale. *Adjunct Assistant Professor of Dentistry*
B.S., St. John's (New York), 1955; D.D.S., New York University, 1959

Paul Duboff. *Adjunct Associate Professor of Dentistry*
B.S., Rutgers, 1952; D.D.S., Columbia, 1956

Martin Handlers. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1945

Robert L. Jacobson. *Adjunct Assistant Professor of Dentistry*

B.S., Bucknell, 1948; D.D.S., New York University, 1953

Joseph E. Kafer. *Assistant Clinical Professor of Dentistry*

B.A., New York University, 1943; D.M.D., Pittsburgh, 1946

David Kaplan. *Associate Professor of Dentistry*

B.S., College of the City of New York, 1958; D.D.S., New York University, 1960

Matthew D. Levin. *Adjunct Professor of Dentistry*

D.D.S., Columbia, 1926

DENTAL HYGIENE

DIRECTOR: Professor Patricia A. McLean

Marlene Klyvert. *Assistant Professor of Dental Hygiene*

B.S., Columbia, 1971; M.S., 1972

Dona E. McKinney. *Assistant Professor of Dental Hygiene*

B.S., Columbia, 1971; M.S., 1972

Patricia A. McLean. *Associate Professor of Dental Hygiene*

B.S., New York University, 1959; M.A., Columbia, 1961

Ronald B. Odrich. *Adjunct Assistant Professor of Dentistry*

B.S., Queens, 1958; D.D.S., Columbia, 1959

Bernard B. Tolpin. *Adjunct Assistant Professor of Dentistry*

B.A., Michigan, 1956; D.D.S., Columbia, 1960

EDUCATION AND BEHAVIORAL SCIENCE

Philip Yablon. *Adjunct Assistant Professor of Dentistry*

B.S., City University of New York, 1955; D.D.S., Columbia, 1959; M.P.H., 1973

ENDODONTICS

DIRECTOR: Professor Joseph M. Leavitt

Robert L. Ambinder. *Adjunct Assistant Professor of Dentistry*

B.S., College of the City of New York, 1955; D.D.S., New York University, 1961

Gerald H. Besen. *Adjunct Associate Professor of Dentistry*

D.D.S., Minnesota, 1947

Murray A. Cantor. *Adjunct Associate Professor of Dentistry*

B.A., Hofstra, 1949; D.D.S., Columbia, 1953

Gerald M. Drew. *Assistant Clinical Professor of Dentistry*

B.A., Pennsylvania, 1944; D.D.S., Michigan, 1948

Marvin Firdman. *Adjunct Associate Professor of Dentistry*

B.A., New York University, 1948; D.D.S., Columbia, 1952

Fredric E. Goodman. *Adjunct Associate Professor of Dentistry*

D.D.S., Temple, 1962

- Edward Greenfield. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., New York University, 1957
- Joseph M. Leavitt. *Clinical Professor of Dentistry*
B.S., Oklahoma, 1936; D.D.S., Columbia, 1940
- S. Abel Moreinis. *Associate Clinical Professor of Dentistry*
D.D.S., Michigan, 1948
- Irving J. Naidorf. *Clinical Professor of Dentistry*
B.A., New York University, 1937; D.D.S., Columbia, 1941
- Michael Pleshette. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1957; D.D.S., Pennsylvania, 1960
- Thomas W. Portway. *Adjunct Associate Professor of Dentistry*
B.S., Fordham, 1950; D.D.S., Columbia, 1956
- Norbert Ripp. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1952; D.D.S., New York University, 1956
- Fred Rothenberg. *Adjunct Professor of Dentistry*
D.M.D., Goettingen, 1935; D.D.S., Pennsylvania, 1937
- Charles S. Solomon. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958
- Howard B. Vogel. *Adjunct Associate Professor of Dentistry*
D.D.S., Columbia, 1950

OPERATIVE DENTISTRY

DIRECTOR: Professor Edward A. Cain, Jr.

- Roy Boelstler. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1956; D.D.S., 1959
- Stanislaw H. Brzustowicz. *Clinical Professor of Dentistry*
B.S., St. John's, 1940; D.D.S., Columbia, 1943
- Edward A. Cain, Jr. *Professor of Dentistry*
B.S., Fordham, 1942; D.D.S., Columbia, 1945
- Pandelis Camesas. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1949; D.D.S., Columbia, 1953
- Kenneth C. Deesen. *Adjunct Associate Professor of Dentistry*
D.D.S., Columbia, 1948
- Herbert P. Fritz. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1933; D.D.S., Columbia, 1936
- Frank L. Mellana. *Adjunct Assistant Professor of Dentistry*
B.S., Fordham, 1956; D.D.S., Columbia, 1962
- Frank W. Pandolfo. *Assistant Clinical Professor of Dentistry*
B.S., Queens (New York), 1962; D.D.S., Columbia, 1966
- Joseph A. Pianpiano. *Adjunct Assistant Professor of Dentistry*
B.S., Fordham, 1958; D.D.S., Columbia, 1962

George Rudensky. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1958

Steven S. Scrivani. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1948

William H. Silverstein. *Adjunct Associate Professor of Dentistry*
D.D.S., Maryland, 1937

ORAL BIOLOGY

ACTING DIRECTOR: Professor Melvin L. Morris

Henry P. Levy. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1937; D.D.S., Pennsylvania, 1942

Melvin L. Morris. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1934; M.A., Columbia, 1934; D.D.S., 1941

Melvin L. Moss. *Professor of Anatomy and Professor of Oral Biology*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

Letty Moss-Salentijn. *Associate Professor of Dentistry*
D.D.S., Utrecht, 1967

ORAL SURGERY

DIRECTORS: Professors Louis Mandel and George A. Minervini

Harold D. Baumash. *Adjunct Professor of Dentistry*
D.D.S., Columbia, 1948

Gerald E. Breakstone. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1948

Kourken A. Daglian. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., Columbia, 1943

Anthony L. Di Mango. *Adjunct Assistant Professor of Dentistry*
D.D.S., Georgetown, 1953

John Esposito, Jr. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1966

Ian Y. Hu. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1954

Bertram Klatskin. *Adjunct Associate Professor of Dentistry*
B.A., Cornell, 1937; D.D.S., Columbia, 1941

Louis J. Loscalzo. *Adjunct Professor of Dentistry*
B.A., Fordham, 1942; D.D.S., Temple, 1946

Louis Mandel. *Clinical Professor of Dentistry*
B.A., New York University, 1943; D.D.S., Columbia, 1946

Harold Marantz. *Adjunct Assistant Professor of Dentistry*
B.S., Harvard, 1943; D.D.S., New York University, 1946

George A. Minervini. *Clinical Professor of Dentistry*

B.A., Columbia, 1942; D.D.S., 1946

George L. O'Grady. *Adjunct Professor of Dentistry*

B.A., Fordham, 1929; D.D.S., Columbia, 1934

Daniel D. Schube. *Adjunct Assistant Professor of Dentistry*

B.A., Brooklyn, 1945; D.D.S., New York University, 1949

Boaz M. Shattan. *Adjunct Associate Professor of Dentistry*

B.A., Columbia, 1940; D.D.S., 1943

Morton Jay Stern. *Adjunct Associate Professor of Dentistry*

B.A., Upsala, 1949; D.D.S., Temple, 1953

Morton A. Winner. *Adjunct Assistant Professor of Dentistry*

B.S., College of the City of New York, 1959; D.D.S., Columbia, 1963

At Roosevelt Hospital:

Edward B. Armstrong. *Adjunct Associate Professor of Dentistry*

B.A., Pennsylvania, 1950; D.D.S., New York University, 1954

Gerald E. Lederman. *Adjunct Assistant Professor of Dentistry*

B.S., Columbia, 1960; D.D.S., 1964

Andrew M. Linz. *Professor of Clinical Dentistry*

D.D.S., Pennsylvania, 1948; M.Sc. (Dent.), 1953

David Schwartz. *Adjunct Assistant Professor of Dentistry*

B.A., Columbia, 1961; D.D.S., 1965

Peter B. Terenzio. *Adjunct Professor of Dentistry*

L.L.B., Connecticut, 1940; M.H.A., Northwestern, 1950

At St. Luke's Hospital:

E. Joseph Marged. *Adjunct Assistant Professor of Dentistry*

D.D.S., Temple, 1962

Richard H. Sand. *Adjunct Assistant Professor of Dentistry*

B.A., Brooklyn, 1955; D.D.S., New York University, 1959

Abbe J. Selman. *Adjunct Associate Professor of Dentistry*

B.A., New York University, 1940; D.D.S., Maryland, 1944; M.S., 1951

OROFACIAL GROWTH AND DEVELOPMENT

DIRECTOR: Professor Sidney L. Horowitz

Eleanor Applebaum. *Assistant Clinical Professor of Dentistry*

M.A., Hunter, 1969; M.S., Sarah Lawrence, 1973

Godofredo V. Benedicto. *Adjunct Assistant Professor of Dentistry*

D.M.D., National University (Philippines), 1936

Sidney L. Horowitz. *Professor of Dentistry*

B.S., Columbia, 1942; D.D.S., New York University, 1945

- Gary L. Lighter. *Assistant Clinical Professor of Dentistry*
B.A., State University of New York (Buffalo), 1965; D.M.D., Pennsylvania, 1969
- Lawrence R. Siegel. *Assistant Clinical Professor of Dentistry*
B.A., Upsala, 1963; D.D.S., Temple, 1967

ORTHODONTICS

DIRECTOR: Professor Nicholas A. Di Salvo

- Lawrence W. Bergmann. *Assistant Clinical Professor of Dentistry*
B.A., Colgate, 1951; D.D.S., Georgetown, 1958
- Abraham M. Blechman. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1945; D.D.S., 1948
- Marino A. Bramante. *Adjunct Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1957
- Nicholas A. Di Salvo. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945; Ph.D., 1952
- Monroe M. Gliedman. *Adjunct Associate Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952
- Richard Gliedman. *Adjunct Associate Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952
- Robert J. Huettner. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1949; D.D.S., Michigan, 1949; M.S., 1950
- Robert J. Isaacson. *Adjunct Assistant Professor of Dentistry*
B.S., Rutgers, 1953; M.S., 1954; D.D.S., Columbia, 1958
- Jacob I. Kaplan. *Adjunct Associate Professor of Dentistry*
B.A., New York University, 1938; D.D.S., Columbia, 1943
- Gustave Lasoff. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1940; D.D.S., Medical College of Virginia, 1944
- Melvin M. Leifert. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1963; State University of New York (Buffalo), 1967
- Vincent E. Lynch. *Adjunct Assistant Professor of Dentistry*
B.A., Holy Cross, 1952; D.D.S., Columbia, 1956
- Edward C. McNulty. *Adjunct Assistant Professor of Dentistry*
B.S., Holy Cross, 1957; D.M.D., Harvard, 1962
- Malcolm E. Meistrell, Jr. *Adjunct Assistant Professor of Dentistry*
B.A., Princeton, 1960; D.D.S., Michigan, 1964
- Henry I. Nahoum. *Associate Professor of Dentistry*
B.A., Brooklyn, 1940; D.D.S., Columbia, 1943
- Armand M. Oppenheimer. *Adjunct Associate Professor of Dentistry*
B.A., College of the City of New York, 1926; B.S., Columbia, 1927; D.D.S., 1929

Herbert P. Ostreicher. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1943; D.D.S., 1945

Julius Tarshis. *Adjunct Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1949

Clifford L. Whitman. *Adjunct Professor of Dentistry*
D.D.S., Maryland, 1927

PEDODONTICS

DIRECTOR: Professor Charles A. Sweet, Jr.

Albert Green. *Adjunct Associate Professor of Dentistry*
B.A., Temple, 1950; D.D.S., Pennsylvania, 1954

Marvin B. King. *Associate Clinical Professor of Dentistry*
D.D.S., New York University, 1954

George C. Kiriakopoulos. *Adjunct Associate Professor of Dentistry*
B.A., Brooklyn, 1950; D.D.S., Columbia, 1954

Seymour Koster. *Adjunct Associate Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949

Alfred J. Mezza. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1959; D.D.S., Fairleigh Dickinson, 1963

Edward J. Piesman. *Adjunct Assistant Professor of Dentistry*
B.A., Queens, 1966; D.M.D., Pennsylvania, 1970

Barbara B. Rocco. *Assistant Clinical Professor of Dentistry*
B.A., Syracuse, 1956; D.D.S., Maryland, 1959

Arnold Rosenberg. *Clinical Professor of Dentistry*
B.S., New York University, 1943; D.D.S., 1945

Solomon N. Rosenstein. *Professor of Dentistry*
B.S., College of the City of New York, 1929; D.D.S., Columbia, 1930

Daniel Silfen. *Adjunct Assistant Professor of Dentistry*
B.A., Pennsylvania, 1942; D.D.S., 1945

Charles A. Sweet, Jr. *Professor of Dentistry*
B.S., Pacific, 1946; D.D.S., 1946

David H. Wolmer. *Adjunct Assistant Professor of Dentistry*
B.A., Hunter, 1955; D.D.S., Columbia, 1958

PERIODONTICS

DIRECTOR: Professor Robert Gottsegen

Vincent J. Abbatiello. *Adjunct Assistant Professor of Dentistry*
B.A., Cornell, 1966; D.M.D., Harvard, 1970

Michael Baron. *Adjunct Assistant Professor of Dentistry*
D.D.S., Georgetown, 1968

- Barry L. Behrens. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn College of Pharmacy, 1965; D.D.S. Medical College of Virginia, 1969
- Frank E. Beube. *Adjunct Professor of Dentistry*
L.D.S., D.D.S., Toronto, 1930
- Robert L. Blair. *Adjunct Assistant Professor of Dentistry*
B.S., Brooklyn, 1965; D.D.S., Temple, 1969
- Robert D. Blank. *Adjunct Assistant Professor of Dentistry*
D.M.D., Pennsylvania, 1965
- Herman Cantor. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1934; D.D.S., 1937
- Alvin D. Cederbaum. *Adjunct Associate Professor of Dentistry*
D.M.D., Tufts, 1939
- Raymond Z. Darakjian. *Assistant Clinical Professor of Dentistry*
D.D.S., Fairleigh Dickinson, 1968
- P. Charles Gabriele. *Adjunct Associate Professor of Dentistry*
B.A., Brooklyn, 1956; D.D.S., Pennsylvania, 1958
- Arnold M. Geiger. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1938; D.D.S., Pennsylvania, 1941
- George L. Glick. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1967; D.D.S., Temple, 1971
- Steven I. Gold. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1966
- Stephen F. Goodman. *Adjunct Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1960
- Robert Gottsegen. *Professor of Dentistry*
B.A., Michigan, 1939; D.D.S., Columbia, 1943
- Wesley Halpert. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., Columbia, 1946
- Leonard S. Hirschfeld. *Adjunct Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944
- Raymond F. Johnson, Jr. *Adjunct Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1952
- Irving A. Karel. *Adjunct Associate Professor of Dentistry*
D.D.S., Temple, 1951
- Burton Langer. *Associate Clinical Professor of Dentistry*
B.S., Tufts, 1960; D.M.D., 1964; M.Sc.D., Boston, 1966
- Walter I. Lipow. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1961
- Alan Lubarr. *Adjunct Assistant Professor of Dentistry*
B.A., Yeshiva, 1964; D.M.D., Pennsylvania, 1968

- David M. Monahan. *Adjunct Assistant Professor of Dentistry*
D.D.S., St. Louis, 1963
- Bernard S. Moskow. *Adjunct Associate Professor of Dentistry*
D.D.S., Temple, 1954; M.Sc.D., Pennsylvania, 1958
- Morton C. Rennert. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958
- Albert Salkind. *Adjunct Associate Professor of Dentistry*
D.D.S., Marquette, 1943
- Michael B. Savin. *Adjunct Assistant Professor of Dentistry*
B.A., Rochester, 1961; D.M.D., Pennsylvania, 1965
- Murray Schwartz. *Clinical Professor of Dentistry*
B.A., New York University, 1950; D.D.S., Columbia, 1953
- Stephen Silston. *Adjunct Assistant Professor of Dentistry*
B.S., Indiana, 1968; D.D.S., 1971; M.Sc.D., Boston, 1973
- Marvin Solomon. *Adjunct Assistant Professor of Dentistry*
B. Chem. Eng., College of the City of New York, 1960; D.D.S., Fairleigh Dickinson, 1965
- Marvin Spodek. *Adjunct Assistant Professor of Dentistry*
B.S., Brooklyn, 1952; D.D.S., Columbia, 1956
- Stephen D. Stein. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1962; D.D.S., 1966
- Bernard H. Wasserman. *Adjunct Professor of Dentistry*
B.A., Brooklyn, 1941; D.D.S., Columbia, 1944
- Monroe M. Weinstein. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1952; D.D.S., 1957

PREVENTIVE DENTISTRY

DIRECTOR: Professor Irwin D. Mandel

- David S. Abelson. *Assistant Clinical Professor of Dentistry*
D.D.S., Michigan, 1971
- Lillian H. Bachman. *Adjunct Assistant Professor of Dentistry*
B.S., Queens (New York); 1959; D.D.S., Columbia, 1963; M.A., 1967
- Bernard M. Brachfeld. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1958; Ph.D., 1973
- Robert S. Breakstone. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1945
- Harold P. Cobin. *Adjunct Assistant Professor of Dentistry*
B.S., St. John's (New York), 1927; D.D.S., Columbia, 1931
- Irwin Dambrot. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1950; D.D.S., Columbia, 1955
- Daniel H. Fine. *Assistant Professor of Dentistry*
B.S., Queens (New York), 1961; D.M.D., Pennsylvania, 1965

- Joseph Fisch. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1942; D.D.S., 1954
- Robert S. Goldman. *Assistant Clinical Professor of Dentistry*
B.A., Temple, 1963; D.M.D., Pittsburgh, 1968
- Dellmen Hecht. *Adjunct Assistant Professor of Dentistry*
B.A., Syracuse, 1960; D.D.S., Temple, 1964
- Nathaniel H. Lenchner. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1943; D.D.S., 1950
- Irwin D. Mandel. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945
- Stephen V. Mender. *Adjunct Assistant Professor of Dentistry*
D.M.D., Pennsylvania, 1967
- Herbert I. Oshrain. *Adjunct Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., New York University, 1942
- Kenneth L. Siegel. *Adjunct Assistant Professor of Dentistry*
B.A., Dartmouth, 1960; D.D.S., Columbia, 1964
- Paul J. Tannenbaum. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1957; D.D.S., Columbia, 1961
- Spyros Vratsanos. *Assistant Professor of Microbiology and Assistant Professor of Oral Biology*
B.S., Athens, 1950; M.S., Adelphi, 1956; Ph.D., Fordham, 1961
- Stephen Wotman. *Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1956
- Albert Zengo. *Assistant Clinical Professor of Dentistry*
B.S., Tufts, 1959; D.D.S., Columbia, 1964

PROSTHODONTICS

DIRECTOR: Professor John J. Lucca

- Jacob Abelson. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., Columbia, 1945
- Herbert D. Ayers. *Associate Professor of Dentistry*
B.A., Columbia, 1929; D.D.S., 1931
- Harold H. Blank. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1939; D.D.S., Columbia, 1942
- Sebastian A. Bruno. *Clinical Professor of Dentistry*
D.M.D., Tufts, 1948
- Victor S. Caronia. *Adjunct Professor of Dentistry*
D.D.S., Columbia, 1957
- Gerard L. Courtade. *Adjunct Professor of Dentistry*
B.A., Columbia, 1937; D.D.S., 1940

- Burney M. Croll. *Adjunct Assistant Professor of Dentistry*
B.A., Syracuse, 1964; D.D.S., State University of New York (Buffalo), 1968
- Joseph A. De Julia. *Adjunct Associate Professor of Dentistry*
B.S., Pittsburgh, 1951; D.D.S., Columbia, 1962
- Gustav T. Durrer. *Adjunct Associate Professor of Dentistry*
Dr. Med. Dent., Berne, 1937; D.D.S., Pennsylvania, 1940
- Stanley P. Freeman. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1957; D.D.S., McGill, 1961
- Joel Friedman. *Adjunct Associate Professor of Dentistry*
B.A., New York University, 1936; D.D.S., Columbia, 1939
- Joel Goldin. *Adjunct Associate Professor of Dentistry*
B.A., Amherst, 1959; D.M.D., Harvard, 1963
- Alvin J. Grayson. *Associate Clinical Professor of Dentistry*
D.D.S., Indiana, 1952
- George W. Hindels. *Adjunct Professor of Dentistry*
M.D., Vienna, 1938; D.D.S., Columbia, 1943
- Alfred Holzman. *Assistant Clinical Professor of Dentistry*
D.D.S., Michigan, 1927
- Kenneth Jackier. *Adjunct Assistant Professor of Dentistry*
B.S., Dickinson College, 1962; D.D.S., Pennsylvania, 1966
- Arnold S. Jutkowitz. *Adjunct Assistant Professor of Dentistry*
D.M.D., Pennsylvania, 1966
- Eugene P. LaSota. *Adjunct Associate Professor of Dentistry*
B.A., Hofstra, 1957; D.D.S., Columbia, 1961
- John J. Lucca. *Professor of Dentistry*
B.A., New York University, 1941; D.D.S., Columbia, 1947
- James F. McCosker. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1968; D.D.S., Columbia, 1971
- William J. Miller. *Adjunct Professor of Dentistry*
B.A., New York University, 1940; D.D.S., Columbia, 1943
- Robert D. Miner. *Adjunct Associate Professor of Dentistry*
B.S., Denison, 1962; D.D.S., Columbia, 1967
- Dennis N. Morea. *Assistant Clinical Professor of Dentistry*
B.S., Fordham, 1966; D.D.S., Columbia, 1970
- Ralph K. Neuhaus. *Adjunct Associate Professor of Dentistry*
B.S., Moravian, 1961; D.D.S., Columbia, 1965
- John D. Piro. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1946
- William Raebeck, Jr. *Adjunct Associate Professor of Dentistry*
B.S., Colgate, 1948; D.D.S., Columbia, 1947

- Louis I. Rubins. *Associate Clinical Professor of Dentistry*
B.S., Queens (New York), 1956; D.D.S., Columbia, 1960
- John M. Scarola. *Adjunct Associate Professor of Dentistry*
B.S., Fordham, 1956; D.D.S., Columbia, 1960
- Harry Shpuntoff. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943
- Robert Smirnow. *Adjunct Assistant Professor of Dentistry*
D.D.S., Pittsburgh, 1945
- Peter H. Strife II. *Adjunct Associate Professor of Dentistry*
B.A., Middlebury, 1959; D.D.S., Pennsylvania, 1959
- Ennio L. Uccellani. *Professor of Dentistry*
B.S., College of the City of New York, 1946; D.D.S., Columbia, 1948
- Maxwell Widrow. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1940
- Jerome A. Zane. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1943
- At Grasslands Hospital:
- Max P. Fishberg. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., New York University, 1944
- Robert E. Herlands. *Adjunct Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944
- PSYCHIATRIC DENTAL SERVICE
- DIRECTOR: Professor Austin H. Kutscher
- William C. Baral. *Adjunct Assistant Professor of Dentistry*
B.S., Columbia, 1950; D.D.S., 1953
- Martin Bassiur. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1964; D.D.S., 1968
- Daniel J. Cherico. *Adjunct Assistant Professor of Dentistry*
B.A., St. Joseph's Seminary, 1968; Ph.D., Indiana, 1973
- Joseph C. De Lisi. *Adjunct Associate Professor of Dentistry*
D.D.S., Columbia, 1952
- Gary D. Gross. *Adjunct Assistant Professor of Dentistry*
B.A., Cornell, 1962; D.D.S., New York University, 1966
- Bernard Gurian. *Adjunct Assistant Professor of Dentistry*
B.S., Illinois, 1937; D.D.S., 1939
- Herman S. Harris. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1929
- Ellen N. Hosiosky. *Adjunct Associate Professor of Dentistry*
D.M.D., Basle, 1935; D.H., Guggenheim Dental Clinic, 1939; D.D.S., Columbia, 1947

Austin H. Kutscher. *Associate Professor of Dentistry*
B.S., New York University, 1945; D.D.S., Columbia, 1946

Arthur Shain. *Associate Clinical Professor of Dentistry*
B.S., New York University, 1935; D.D.S., Dalhousie, 1939

Jay Weiss. *Adjunct Assistant Professor of Dentistry*
B.A., Harvard, 1948; D.M.D., Tufts, 1952

STOMATOLOGY

DIRECTOR: Professor Edward V. Zegarelli

Martin L. Ames. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949

Jack Budowsky. *Adjunct Professor of Dentistry*
D.D.S., Columbia, 1943

John F. Capriccio. *Adjunct Assistant Professor of Dentistry*
D.D.S., Georgetown, 1970

Robert E. Crowley. *Adjunct Associate Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939

Joseph A. Cuttita. *Professor of Dentistry*
B.A., Fordham, 1932; M.S., 1935; D.D.S., Columbia, 1939

Harold Darwin. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939

John V. Donovan. *Assistant Clinical Professor of Dentistry*
B.S., Wagner, 1963; D.D.S., Columbia, 1967

Edgar Gattegno. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1942; D.D.S., Columbia, 1945

David I. Hendell. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., Columbia, 1959

Sidney I. Hurwitz. *Adjunct Assistant Professor of Dentistry*
B.S., Brooklyn, 1933; D.D.S., New York University, 1939

Frances R. Karlan. *Adjunct Associate Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1942; D.D.S., Columbia, 1949; M.B.A., Fordham, 1972

Mortimer Karmioli. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943

Joshua S. Landsman. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1971

John K. Lind. *Adjunct Associate Professor of Dentistry*
B.S., St. John's, 1951; D.D.S., Columbia, 1957

Lawrence Marder. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1949; D.D.S., Columbia, 1954

Michael Z. Marder. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1963

Robert N. Schiff. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

Morton R. Schoenberg. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1954; D.D.S., Columbia, 1962

Irving C. Stower. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1935; D.D.S. Columbia, 1938

David J. Zegarelli. *Assistant Professor of Dentistry and Assistant Professor of Pathology*
B.A., Columbia, 1965; D.D.S., 1969

Edward V. Zegarelli. *Edwin S. Robinson Professor of Dentistry*
B.A., Columbia, 1934; D.D.S., 1937; M.S., Chicago, 1943

Edward Zerden. *Adjunct Assistant Professor of Dentistry*
B.A., Michigan, 1941; D.D.S., New York University, 1945

Section of Special Dental Services

Jerome Bartwink. *Adjunct Assistant Professor of Dentistry*
D.M.D., Tufts, 1948

Morton S. Brod. *Adjunct Associate Professor of Dentistry*
B.A., Adelphi, 1951; D.D.S., Columbia, 1955

Martin J. Fields. *Adjunct Assistant Professor of Dentistry*
D.M.D., Tufts, 1948

Joseph Luban. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., Columbia, 1942

Joseph J. Marbach. *Adjunct Professor of Dentistry*
B.A., Drew, 1956; D.D.S., Pennsylvania, 1960

Frank P. Petronella. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1970

John R. Varosecak. *Adjunct Assistant Professor of Dentistry*
B.S., Fairleigh Dickinson, 1966; D.D.S., 1969

Leonard Zaslow. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1964

David Zeisler. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1930; D.D.S., Columbia, 1934

DERMATOLOGY

CHAIRMAN: Professor Leonard C. Harber

Leonard C. Harber. *Professor of Dermatology*
B.A., Johns Hopkins, 1949; M.D., New York University, 1953

Saul L. Sanders. *Clinical Professor of Dermatology*

B.A., Kenyon, 1950; M.D., Cornell, 1954

Richard A. Walzer. *Associate Clinical Professor of Dermatology*

B.A., Harvard, 1952; M.D., Columbia, 1956

MEDICINE

CHAIRMAN: Professor Charles A. Ragan

Henry Aranow, Jr. *Professor of Clinical Medicine*

B.A., Harvard, 1935; M.D., Columbia, 1938

Leslie Baer. *Assistant Professor of Medicine*

B.A., Wisconsin, 1959; M.D., Columbia, 1963

Stuart W. Cosgriff. *Clinical Professor of Medicine*

B.A., Holy Cross, 1938; M.D., Columbia, 1942

Wendell B. Hatfield. *Assistant Professor of Clinical Medicine*

B.A., Columbia, 1953; M.D., 1956

Robert H. Heissenbuttel. *Assistant Professor of Clinical Medicine*

B.A., Thiel, 1959; M.D., Columbia, 1963

Donald A. Holub. *Associate Professor of Clinical Medicine*

B.A., Columbia, 1949; M.D., 1952

George A. Hyman. *Associate Clinical Professor of Medicine*

B.A., Columbia, 1942; M.D., 1945

Paul K. Johnson. *Assistant Clinical Professor of Medicine*

B.A., Hamilton, 1949; M.D., Columbia, 1953

Edgar Leifer. *Professor of Clinical Medicine*

B.S., College of the City of New York, 1937; M.A., Columbia, 1939; Ph.D., 1941; M.D., 1946

Jane H. Morse. *Assistant Professor of Medicine*

B.A., Smith, 1951; M.D., Columbia, 1955

Hans W. Neuberger. *Assistant Professor of Clinical Medicine*

B.A., Wagner, 1941; M.D., Columbia, 1950

Hymie L. Nossel. *Professor of Medicine*

M.B., Ch.B., Cape Town, 1953; Ph.D., Oxon, 1962

Kermit L. Pines. *Clinical Professor of Medicine*

B.A., Columbia, 1937; M.D., 1942

MICROBIOLOGY

CHAIRMAN: Professor Harold S. Ginsberg

Paul D. Ellner. *Professor of Microbiology*

B.S., Long Island, 1949; M.S., Southern California, 1952; Ph.D., Maryland, 1956

Dean L. Engelhardt. *Assistant Professor of Microbiology*

B.A., Amherst, 1961; M.A., 1963; Ph.D., Rockefeller, 1967

Bernard F. Erlanger. *Professor of Microbiology*

B.S., College of the City of New York, 1943; M.A., New York University, 1949; Ph.D., Columbia, 1951

Harold S. Ginsberg. *Professor of Microbiology*

B.A., Duke, 1937; M.D., Tulane, 1941

Elvin A. Kabat. *Professor of Microbiology and Human Genetics and Development*

B.S., College of the City of New York, 1932; M.A., Columbia, 1934; Ph.D., 1937

Wladislaw Manski. *Professor of Microbiology*

M. Phil., Warsaw, 1939; D.Sc., Wroclaw, 1951

Councilman Morgan. *Professor of Microbiology*

B.S., Harvard, 1943; M.D., Columbia, 1946

Sherie L. Morrison. *Assistant Professor of Microbiology*

B.A., Stanford, 1963; Ph.D., 1966

Herbert S. Rosenkranz. *Professor of Microbiology*

B.S., College of the City of New York, 1954; Ph.D., Cornell, 1959

Saul J. Silverstein. *Assistant Professor of Microbiology*

B.S., Cornell, 1968; Ph.D., Florida, 1971

Spyros M. Vratsanos. *Assistant Professor of Microbiology and Assistant Professor of Oral Biology*

B.S., Athens, 1950; M.S., Adelphi, 1956; Ph.D., Fordham, 1961

Charles S. H. Young. *Assistant Professor of Microbiology*

B.A., Oxford, 1966; D. Phil., 1969

OTOLARYNGOLOGY

ACTING CHAIRMAN: Professor Robert M. Hui

Robert M. Hui. *Professor of Clinical Otolaryngology*

B.A., Southern California, 1943; M.D., 1946

John D. Piro. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*

B.A., Fordham, 1943; D.D.S., Columbia, 1946

Robin M. Rankow. *Associate Professor of Clinical Otolaryngology*

B.S., College of the City of New York, 1935; D.D.S., Columbia, 1940; M.D., Rochester, 1950

PATHOLOGY

CHAIRMAN: Professor Donald West King

Giles G. Allard. *Assistant Clinical Professor of Pathology*

M.D., Laval (Canada), 1950

Lucretia Allen. *Assistant Clinical Professor of Pathology*

B.A., New York University, 1948; M.D., State University of New York, 1952

Irwin Almenoff. *Associate Clinical Professor of Pathology*

B.S., College of the City of New York, 1948; M.D., Cornell, 1952

Richard Axel. *Assistant Professor of Pathology*

B.A., Columbia, 1967; M.D., Johns Hopkins, 1970

Paul Bachner. *Adjunct Assistant Professor of Pathology*

B.A., College of the City of New York, 1959; M.D., Columbia, 1963

Ernest Baden. *Adjunct Associate Professor of Pathology*

M.A., Sorbonne, 1946; D.D.S., New York University, 1950; M.D., Geneva, 1963

Charles F. Begg. *Clinical Professor of Pathology*

B.A., Boston, 1935; M.D., Harvard, 1939

Daniel Benninghoff. *Associate Clinical Professor of Pathology*

B.A., Yale, 1949; M.D., Columbia, 1953

William Bernhard. *Assistant Clinical Professor of Pathology*

B.S., Wisconsin, 1927; M.D., Pennsylvania, 1931

Melvin N. Blake. *Associate Clinical Professor of Oral Pathology*

D.D.S., New York University, 1955

William A. Blanc. *Professor of Pathology*

B.A., Geneva, 1940; M.D., 1947; Ph.D., 1952

Thomas Blumenfeld. *Assistant Professor of Pediatric Pathology*

B.S., North Carolina, 1960; M.D., Tennessee, 1964

Lazarevic Bozidar. *Assistant Clinical Professor of Pathology*

M.D., Belgrade, 1956

A. Whitley Branwood. *Professor of Pathology*

M.B., Ch.B., Edinburgh, 1942; M.D., 1948

Donald E. Brown. *Associate Clinical Professor of Pathology*

M.D., Harvard, 1943

John M. Budinger. *Associate Clinical Professor of Pathology*

B.S., Northwestern, 1950; M.D., 1954

Kenneth Button. *Assistant Clinical Professor of Pathology*

B.A., Indiana, 1966; M.D., 1970

Prem M. Chauhan. *Assistant Professor of Pathology*

M.D., Lady Harding Medical College (India), 1948

Glenna J. Corley. *Adjunct Assistant Professor of Pathology*

B.S., Northwestern, 1949; M.S., Illinois, 1952; M.D., Women's Medical College of Pennsylvania, 1956

David Cowen. *Professor of Neuropathology*

B.A., Columbia, 1928; M.D., 1936

Ada B. deChabon. *Assistant Clinical Professor of Pathology*

B.S., Liceo Senioritas, 1949; M.D., Buenos Aires, 1957

Richard Defendini. *Assistant Professor of Neuropathology*

B.A., Michigan, 1948; M.A., 1951; M.D., Rochester, 1961

Arline D. Deitch. *Associate Professor of Experimental Pathology*

B.A., Brooklyn, 1944; M.A., Columbia, 1946; Ph.D., 1954

- John J. DiRe. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1953; M.D., George Washington, 1957
- Larry E. Douglass. *Adjunct Assistant Professor of Pathology*
B.A., Washington (St. Louis), 1959; M.D., Vanderbilt, 1960
- Philip E. Duffy. *Professor of Neuropathology*
B.A., Columbia, 1943; M.D., 1947
- Stefan E. Epstein. *Assistant Clinical Professor of Pathology*
B.A., Columbia, 1956; M.D., State University of New York, 1960
- Azak S. Eryol. *Assistant Professor of Pathology*
B.S., St. Michael, 1956; M.D., Istanbul, 1962
- Cecilia Fenoglio. *Assistant Professor of Pathology*
B.S., St. Elizabeth, 1965; M.D., Georgetown, 1969
- John J. Fenoglio. *Assistant Professor of Pathology*
B.S., Harvard, 1965; M.D., Georgetown, 1969
- Joshua A. Fierer. *Assistant Professor of Pathology*
B.A., Alfred, 1959; M.D., State University of New York, 1963
- Harold P. Gaetz. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1953; M.D., 1958
- Robert S. Galen. *Assistant Professor of Pathology*
B.A., Boston, 1966; M.D., 1970
- S. Raymond Gambino. *Professor of Pathology*
B.S., Antioch, 1948; M.D., Rochester, 1952
- Rudolf Garret. *Clinical Professor of Pathology*
M.D., Poland, 1939
- Lester M. Geller. *Associate Professor of Neuropathology*
B.A., Cornell, 1947; M.A., Michigan State, 1948; Ph.D., New York University, 1953
- Howard B. Goldstein. *Adjunct Assistant Professor of Pathology*
B.A., Colgate, 1955; M.D., Albany Medical College, 1959
- Gabriel Godman. *Professor of Pathology*
B.A., New York University, 1941; M.D., 1944
- Reba M. Goodman. *Adjunct Assistant Professor of Pathology*
B.A., Indiana, 1949; Ph.D., Columbia, 1955
- John G. Gorman. *Clinical Professor of Pathology*
M.B., B.S., Melbourne, 1953
- Liselotte Graf. *Assistant Professor of Pathology*
M.D., Vienna, 1937
- Ross M. Grey. *Associate Professor of Pathology*
D.V.M., Alabama Polytechnical Institute, 1945
- Jack W. C. Hagstrom. *Associate Professor of Pathology*
B.A., Amherst, 1955; M.D., Cornell, 1959

Clinton Van Zandt Hawn. *Clinical Professor of Pathology*
B.A., Williams, 1937; M.D., Harvard, 1941

Arthur Hays. *Assistant Professor of Neuropathology*
B.A., Dartmouth, 1962; B.M.S., 1963; M.D., Colorado, 1966

Victor D. Herbert. *Clinical Professor of Pathology*
B.S., Columbia, 1948; M.D., 1952

Robert L. Hirsch. *Associate Clinical Professor of Pathology*
B.A., Cornell, 1947; M.D., 1951

Arthur I. Hurvitz. *Adjunct Assistant Professor of Pathology*
D.V.M., Michigan State, 1964; Ph.D., California (Davis), 1967

Robert V. P. Hutter. *Adjunct Professor of Pathology*
B.A., State University of New York (Syracuse), 1950; M.D., 1954; M.A., Yale, 1968

Harry L. Ioachim. *Adjunct Professor of Pathology*
M.D., Bucharest, 1949

Elizabeth Jacob. *Assistant Professor of Clinical Pathology*
M.B., B.S., India, 1955

Austin D. Johnston. *Associate Professor of Pathology (assigned to Orthopedic Surgery)*
B.A., Columbia, 1945; M.D., 1947

Lewis A. Johnson. *Assistant Professor of Pathology*
B.A., Minnesota, 1951; M.D., 1955

Catherine Kambolis. *Adjunct Assistant Professor of Pathology*
M.D., Athens, 1955

Kendall Kane. *Assistant Clinical Professor of Pathology*
B.A., Princeton, 1955; M.D., Columbia, 1960

Mavis Kaufman. *Associate Professor of Neuropathology (assigned to Psychiatry)*
M.D., New York Medical College, 1944

Hans Kaunitz. *Clinical Professor of Pathology*
M.D., Vienna, 1930

Gordon I. Kaye. *Associate Professor of Surgical Pathology*
B.A., Columbia, 1955; M.A., 1957; Ph.D., 1961

Donald West King. *Francis Delafield Professor of Pathology*
M.D., Syracuse, 1949

Mary Elizabeth King. *Assistant Professor of Pathology*
B.A., Smith, 1947; M.D., Columbia, 1951

John Y. Kiyasu. *Associate Clinical Professor of Pathology*
B.A., California, 1950; M.A., 1951; Ph.D., 1955

Martin S. Krumerman. *Assistant Clinical Professor of Pathology*
B.A., New York University, 1961; M.D., 1965

Nathan Lane. *Professor of Surgical Pathology*
B.A., Columbia, 1943; M.D., 1945

- Raffaele Lattes. *Professor of Surgical Pathology*
M.D., Turin, 1933; Med.Sc.D., Columbia, 1946
- George Lumb. *Adjunct Professor of Pathology*
M.D., Royal College of Physicians (London), 1946
- Basil Moumgis. *Adjunct Assistant Professor of Pathology*
M.D., Pittsburgh, 1949
- Hiroshi Nakazawa. *Assistant Clinical Professor of Pathology*
M.D., Keio (Japan), 1958
- Artemis Nash. *Assistant Clinical Professor of Pathology*
B.A., Smith, 1949; M.D., Columbia, 1953
- Clayton Natta. *Assistant Professor of Medicine and Pathology*
M.D., Toronto, 1961
- Carlos Navarro. *Assistant Professor of Pathology*
B.S., Mexico, 1947; M.D., 1955
- Joseph O'Brien. *Adjunct Assistant Professor of Pathology*
B.A., Columbia, 1957; M.D., State University of New York (Downstate), 1961
- M. Richard Pachter. *Assistant Clinical Professor of Pathology*
M.D., Zurich, 1956
- Robert Pascal. *Associate Professor of Surgical Pathology*
B.A., Columbia, 1958; M.D., 1962
- Karl H. Perzin. *Associate Professor of Surgical Pathology*
B.A., Columbia, 1954; M.D., 1958
- Sidney Pestka. *Adjunct Professor of Pathology*
B.A., Princeton, 1957; M.D., Pennsylvania, 1961
- Louise L. Phillips. *Associate Clinical Professor of Pathology*
B.S., William and Mary, 1934; M.A., Columbia, 1940
- Conrad Pirani. *Professor of Pathology*
M.D., Milan, 1938
- William Pollack. *Assistant Clinical Professor of Pathology*
M.S., Rutgers, 1950; Ph.D., 1964
- Ralph M. Richart. *Professor of Pathology (assigned to Obstetrics & Gynecology)*
B.A., Johns Hopkins, 1954; M.D., Rochester, 1958
- Robert R. Rickert. *Adjunct Associate Professor of Pathology*
B.A., Michigan, 1958; M.D., Johns Hopkins, 1962
- Theophilus Roberts. *Professor of Clinical Pathology*
M.D., Meharry, 1951
- Leon Roizin. *Professor of Neuropathology (assigned to Psychiatry)*
B.A., State Lyceum (Bessarabia), 1930; M.D., Royal University (Milan), 1936
- Edwarda Rorat. *Adjunct Assistant Professor of Pathology*
M.D., Stettin (Poland), 1959

- Stephen Ryan. *Assistant Clinical Professor of Pathology*
M.D., Colorado, 1961
- Angus C. Sampath. *Assistant Professor of Pathology*
Dr. Sci., Straubourg, 1966
- Henry G. Schriever. *Assistant Clinical Professor of Pathology*
B.A., Vermont, 1956; M.D., New York Medical College, 1960
- Mathieu Seide. *Assistant Clinical Professor of Pathology*
M.D., Haiti, 1960
- Lewis Shapiro. *Clinical Professor of Dermatology and Pathology*
B.A., Duke, 1948; M.D., 1952
- Stanley S. Simbonis. *Associate Clinical Professor of Pathology*
B.S., Yale, 1953; M.D., 1957
- Ralph Wood Snyder. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1951; M.D.C.M., 1953
- Harold J. Sobel. *Associate Clinical Professor of Pathology*
B.A., Brooklyn, 1950; M.D., Chicago Medical School, 1954
- Sheldon C. Sommers. *Clinical Professor of Pathology*
M.D., Harvard, 1941
- Herbert Stoerk. *Professor of Pathology*
M.D., Vienna, 1938
- Harry H. Stumpf. *Adjunct Associate Professor of Pathology*
B.A., New York University, 1947; M.D., State University of New York, 1951
- Nicole Suciu-Foca. *Assistant Professor of Experimental Pathology (in Surgery)*
B.S., Bucharest, 1959; M.S., 1960; Ph.D., 1965
- Richard L. Swarm. *Associate Clinical Professor of Pathology*
B.A., Washington (St. Louis), 1949; M.D., 1950
- Myron Tannenbaum. *Associate Professor of Pathology (assigned to Urology)*
B.S., New York University, 1952; M.S., 1955; Ph.D., 1957; M.D., Chicago, 1961
- Virginia Tennyson. *Associate Professor of Neuropathology*
B.S., Pennsylvania State, 1946; M.S., Baylor, 1956; Ph.D., Columbia, 1960
- John A. Terzakis. *Assistant Clinical Professor of Pathology*
M.D., New York University, 1961
- Philip Tomashefsky. *Assistant Professor of Pathology*
B.S., College of the City of New York, 1946; M.S., 1951; Ph.D., New York University, 1969
- Myron E. Tracht. *Associate Clinical Professor of Pathology*
B.A., Princeton, 1948; M.S., Chicago, 1954; M.D., 1955
- Henry J. Vogel. *Professor of Microbiology*
B.S., London, 1939; M.S., New York University, 1941; Ph.D., 1949
- Ruth H. Vogel. *Associate Professor of Experimental Pathology*
Ph.D., New York University, 1948

- Bernard M. Wagner. *Clinical Professor of Pathology*
M.D., Hahnemann, 1949
- H. Joachim Wigger. *Associate Professor of Pediatric Pathology*
M.D., Hamburg, 1954
- George D. Wilner. *Assistant Professor of Pathology*
B.S., Northwestern, 1962; M.D., 1965
- Marianne Wolff. *Associate Professor of Surgical Pathology*
B.A., Hunter, 1948; M.D., Columbia, 1952
- William C. Yakovac. *Adjunct Associate Professor of Pathology*
B.A., Dartmouth, 1946; M.D., Pennsylvania, 1949
- Kaity Yannopoulos. *Assistant Clinical Professor of Pathology*
M.D., Thessaloniki (Greece), 1954
- David J. Zegarelli. *Assistant Professor of Dentistry and Assistant Professor of Pathology*
B.A., Columbia, 1965; D.D.S., 1969
- Frederick T. Zugibe. *Adjunct Associate Professor of Pathology*
B.S., St. Francis (New York), 1951; M.S., Chicago, 1959; Ph.D., 1960; M.D., West Virginia, 1968

PHARMACOLOGY

- CHAIRMAN: Professor Brian F. Hoffman
- J. Thomas Bigger, Jr. *Associate Professor of Pharmacology and Associate Professor of Medicine*
B.A., Emory, 1955; M.D., Georgia, 1960
- Kenneth E. Eakins. *Associate Professor of Pharmacology (in Ophthalmology)*
Ph.D., London, 1962
- Lowell M. Greenbaum. *Professor of Pharmacology*
B.S., College of the City of New York, 1949; Ph.D., Tufts, 1953
- Brian F. Hoffman. *David Hosack Professor of Pharmacology*
B.A., Princeton, 1943; M.D., Long Island, 1947
- Frederick G. Hofmann. *Professor of Pharmacology*
B.A., Michigan, 1943; Ph.D., Harvard, 1952
- Norman Kahn. *Associate Professor of Pharmacology and Associate Professor of Dentistry*
B.A., Columbia, 1954; D.D.S., 1958; Ph.D., 1964
- Edward B. Kirsten. *Assistant Professor of Pharmacology*
B.S., Fairleigh Dickinson, 1962; M.S., New York University, 1966; M.A., Hunter, 1969; Ph.D., City University of New York, 1969
- Shih-Hsun Ngai. *Professor of Anesthesiology and of Pharmacology*
M.B., National Central (Nanking), 1944

Michael R. Rosen. *Assistant Professor of Pharmacology*

B.A., Wesleyan, 1960; M.D., State University of New York, Downstate Medical Center, 1964

Wilbur H. Sawyer. *Professor of Pharmacology*

B.A., Harvard, 1942; M.D., 1945; Ph.D., 1950

Lance L. Simpson. *Assistant Professor of Pharmacology and Psychiatry*

B.A., Vanderbilt, 1966; Ph.D., California (Berkeley), 1969

Hsueh-Hwa Wang. *Associate Professor of Pharmacology*

M.D., National Central University Medical School (China), 1946

Shih-Chun Wang. *Professor of Pharmacology*

B.S., Yenching, 1931; M.D., Peiping Union Medical College (China), 1935; Ph.D., Northwestern, 1940

Andrew L. Wit. *Associate Professor of Pharmacology*

B.S., Bates, 1963; Ph.D., Columbia, 1968

PHYSIOLOGY

CHAIRMAN: Professor John V. Taggart

Martin Blank. *Associate Professor of Physiology*

B.S., College of the City of New York, 1954; Ph.D., Columbia, 1957; Ph.D., Cambridge, 1959

Shu Chien. *Professor of Physiology*

M.B., National Taiwan, 1954; Ph.D., Columbia, 1957

Louis J. Cizek. *Associate Professor of Physiology*

B.S., Fordham, 1937; M.D., Columbia, 1941

Raimond Emmers. *Associate Professor of Physiology*

B.A., East Texas Baptist, 1953; M.A., North Carolina, 1955; Ph.D., Syracuse, 1958

Eric R. Kandel. *Professor of Physiology and Psychiatry*

B.A., Harvard, 1952; M.D., New York University, 1956

William L. Nastuk. *Professor of Physiology*

B.S., Rutgers, 1939; Ph.D., 1945

Mero R. Nocenti. *Associate Professor of Physiology*

B.A., West Virginia, 1951; M.S., 1952; Ph.D., Rutgers, 1955

John P. Reuben. *Associate Professor of Physiology (in Neurology)*

B.A., Grinnell, 1954; M.S., Rochester, 1956; Ph.D., Florida, 1959

David Schachter. *Professor of Physiology*

B.S., New York University, 1946; M.D., 1949

James H. Schwartz. *Professor of Physiology*

B.A., Columbia, 1954; M.D., New York University, 1959

William Alden Spencer. *Professor of Physiology and Neurology*

B.A., Reed, 1955; M.D., Oregon, 1957

John V. Taggart. *John C. Dalton Professor of Physiology*

M.D., Southern California, 1940

Paul Witkovsky. *Associate Professor of Physiology (in Ophthalmology)*
B.A., California (Los Angeles), 1958; M.A., 1960; Ph.D., 1962

PSYCHIATRY

ACTING CHAIRMAN: Professor Sidney Malitz

Stephen K. Firestein. *Assistant Clinical Professor of Psychiatry*
B.A., Columbia, 1947; M.D., 1951

Sidney Malitz. *Professor of Clinical Psychiatry*
M.D., Chicago, 1946

Bernard B. Schoenberg. *Associate Professor of Clinical Psychiatry*
M.D., Columbia, 1954

PUBLIC HEALTH

CHAIRMAN: Professor John H. Bryant

Lowell E. Bellin. *Professor of Public Health (Health Administration)*
B.S., Yale, 1948; M.D., State University of New York (Downstate), 1951; M.P.H., Harvard, 1964

John H. Bryant. *DeLamar Professor of Public Health*
B.S., Arizona, 1949; M.D., Columbia, 1953

Bernard D. Challenor. *Associate Professor of Public Health (Health Administration)*
B.A., Hunter, 1957; M.D., State University of New York (Downstate), 1961; M.P.H., Harvard, 1963

John L. Colombotos. *Associate Professor of Sociomedical Sciences*
B.A., Columbia, 1949; M.A., 1952; Ph.D., Michigan, 1961

Morton A. Fisher. *Adjunct Associate Professor of Health Administration*
B.S., Western Reserve, 1942; D.D.S., 1944; B.A., Brooklyn, 1958; M.P.H., Columbia, 1957

Mata K. Nikias. *Assistant Professor of Public Health (Sociomedical Sciences)*
D.D.S., Athens, 1953; M.P.H., Columbia, 1960; Ph.D., 1967

SURGERY

CHAIRMAN: Professor Keith Reemtsma

George F. Crikelair. *Professor of Clinical Surgery*
B.A., Wisconsin, 1941; M.D., 1944

Keith Reemtsma. *Professor of Surgery*
B.S., Idaho State, 1945; M.D., Pennsylvania, 1949

ASSOCIATES

Ralph S. Blume (*Medicine*)
Louise A. Goode (*Microbiology*)
Daniel Justman (*Psychiatry*)
Leon Lefer (*Psychiatry*)
Arnold L. Lisio (*Medicine*)
Daniel H. Macken (*Medicine*)

Alvin J. Marx (*Pathology*)
Peter K. Pang (*Pharmacology*)
Samuel M. Ross (*Pharmacology*)
Robert Silbert (*Psychiatry*)
John Waldes
John Ching-Liang Wu (*Pathology*)

SENIOR RESEARCH ASSOCIATE

Neal W. Chilton

RESEARCH ASSOCIATES

Neville Colman (*Pathology*)

Solomon L. Katz

Margaret E. Long (*Pathology*)Mary S. Parshley (*Pathology*)

Herbert F. Silvers

Irwin Steuer

Ephraim Weinstein

INSTRUCTORS

Erlinda A. Benedicto

Petra E. P. Bonogon (*Pathology*)

Alvin T. Boyd

Edward J. Charpentier

Anthony J. Curinga

Joseph S. D'Agrosa

Richard Delson

Robert R. DeMarrais

Deborah F. Diserens

Judith Essig

David A. Fields

Joel Z. Fineberg

Arnold I. Fink

Robert Gabriele

Susanne M. Gelb

John Gell

Jeffrey Gold

Steven J. Goldberg

Jay P. Goldsmith

Judith L. Goodrich

Fred I. Goodstein

Howard Gordon

Joseph Gorelick

Richard A. Greenberg

Walter A. Gutstein

Lucian Kahan

Steven R. Katz

Viktoria I. Kohler

John F. Kosinski

David M. Kritchman

Richard Kulwin

Jack Levi

Eugene M. Levine

S. Warren Levine

Kenneth R. Levy

James A. Lipton

Gifford Y. Lum (*Pathology*)Bruce D. Mason (*Pathology*)INSTRUCTORS (*continued*)Armand Miranda (*Pathology*)

Patricia A. Morgan

Quentin M. Murphy

Barry L. Musikant

Kenneth N. Namerow

Solange H. Abu Nasser (*Pathology*)Robert D. Newman (*Pathology*)Milagros F. Ona-Sarino (*Pathology*)

John C. Peterson

Herbert Rabinowitz

Charles D. Randolph

Joel Roth (*Pathology*)

Roger P. Santise

Thomas R. Shannon

Corazon G. Sian (*Pathology*)

Guy W. Towle

Michael E. Tucker

Nicholas A. Vero, Jr.

Noel N. Weekes (*Pathology*)

Bertram J. Weissman

ASSISTANT

Peter H. Cain

LECTURERS

Jerry D. Adelson

Robert M. Cole

Hyman Donnenfeld (*Pathology*)

Morris Eckhaus

Robert L. Fisher

Stanley L. Gibbs

Brigitte Graf-Pinthus

Frank R. Hopf

Janis V. Klavins (*Pathology*)

George F. Lindig

George V. Lyons

Marvin Mansky

Howard J. Ruderman

David Spain (*Pathology*)

Arthur B. Weiss

Herbert Williams

Alan Wishner

SPECIAL LECTURERS

Edmund Applebaum (*Anatomy*)Lester Cahn (*Pathology*)Jacob Furth (*Pathology*)C. Zent Garber (*Pathology*)

Sidney C. Rappaport

Abner Wolf (*Pathology*)

Presbyterian Hospital Dental Service

DIRECTOR: Edward V. Zegarelli

CONSULTANTS: Carl R. Oman, Solomon N. Rosenstein, Albin R. Seidel, and Gilbert P. Smith

ATTENDING DENTAL SURGEONS: Edward A. Cain, Jr., Nicholas A. Di Salvo, Robert Gottsegen, Joseph M. Leavitt, John J. Lucca, Louis Mandel, George A. Minervini, Melvin L. Moss, and Edward V. Zegarelli

ASSOCIATE ATTENDING DENTAL SURGEONS: Harold D. Baurmash, Sebastian A. Bruno, Jack Budowsky, Victor S. Caronia, Joseph A. Cuttita, Kourken A. Daglian, Sidney L. Horowitz, David Kaplan, Bert Klatskin, Austin H. Kutscher, John K. Lind, Louis J. Loscalzo, Irwin D. Mandel, Joseph J. Marbach, S. Abel Moreinis, Melvin L. Morris, Henry I. Nahoum, Irving J. Naidorf, Arnold Rosenberg, Boaz M. Shattan, and Ennio L. Uccellani

ASSISTANT ATTENDING DENTAL SURGEONS: Jacob Abelson, Jerome Bartwink, Morton S. Brod, Stanislaw H. Brzustowicz, Raymond Z. Darakjian, Joseph A. DeJulia, Anthony L. DiMango, John V. Donovan, John Esposito, Jr., Martin J. Fields, Daniel H. Fine, Alvin J. Grayson, Wesley Halpert, Ian Y. Hu, Eugene P. LaSota, Joseph Luban, Michael Z. Marder, Herbert P. Ostreicher, Frank W. Pandolfo, John C. Peterson, John D. Piro, Fred Rothenberg, Daniel D. Schube, Murray Schwartz, Steven S. Scrivani, Arthur Shain, Morton J. Stern, Bernard H. Wasserman, Maxwell Widrow, Stephen Wotman, and David J. Zegarelli

ACADEMIC CALENDAR,

1975-1976, 1976-1977

Students will be notified of any changes in the following proposed academic calendar for 1975-1977.

MAJOR RELIGIOUS HOLIDAYS

See "Attendance and Length of Residence" on page 68 of this bulletin for a statement of University policy regarding religious holidays.

1975-1976

Aug 1 Friday.* Last day to apply or reapply for October degrees and certificates (see September 4).

AUTUMN TERM

- Sept 2-3** Tuesday-Wednesday.† Registration, for the academic year, including payment of fees, for D.D.S. degree candidates.
- 3** Wednesday.† Registration for the academic year, including payment of fees, for first-year students in the postdoctoral orthodontics program.
- 3** Wednesday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.
- 4** Thursday. Last day to file *late* application or renewal of application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.
- 4** Thursday. Classes begin for students in the Division of Dental Hygiene.
- 4** Thursday. Classes begin for first-year students in the postdoctoral orthodontics program.

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

Sept	8	Monday. Classes begin for D.D.S. degree candidates.
	8	Monday. First day to change programs and to apply to audit courses.
	10	Wednesday.* Registration, for the academic year, including payment of fees, for all students in the postdoctoral programs except for first-year orthodontics students.
	11	Thursday. Classes begin for all students in the postdoctoral programs except for first-year orthodontics students.
Oct	10	Friday. Last day to change programs and to apply to audit courses. <i>No adjustment of fees for individual courses dropped after this date.</i>
	22	Wednesday. Award of October degrees and certificates.
	31	Friday. Last day to drop courses for students in the Division of Dental Hygiene.
	31	Friday.† Last day to apply or reapply for January degrees and certificates (see December 5).
Nov	3	Monday. Academic holiday for students in the Division of Dental Hygiene.
	4	Tuesday. Election Day. Holiday for students in all programs.
	27-30	Thursday-Sunday. Thanksgiving holidays for students in all programs.
Dec	5	Friday. Last day to file <i>late</i> application or renewal of application for January degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.
	20	Saturday, through January 4, 1976, Sunday. Winter holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.
	20	Saturday, through January 15, 1976, Thursday. Winter holidays for students in the Division of Dental Hygiene.

SPRING TERM

Jan	16	Friday.* Registration, including payment of fees, for students in the Division of Dental Hygiene.
	19	Monday. Classes begin for students in the Division of Dental Hygiene.
	21	Wednesday. Award of January degrees and certificates.
	22	Thursday. First day to change programs and to apply to audit courses.
	28	Wednesday. Last day to change programs and to apply to audit courses. <i>No adjustment of fees for individual courses dropped after this date.</i>

*Students allowed to register after the period specified must pay a late fee.

†Students who apply after this date must pay a late fee.

- Feb 16** Monday. Washington's Birthday. Holiday for D.D.S. degree candidates and for students in the postdoctoral programs.
- 16** Monday.* Last day to apply or reapply for May degrees and certificates (see April 5).
- Mar 1** Monday. Last day to drop courses for students in all programs.
- 7-14** Sunday-Sunday. Spring holidays for students in the Division of Dental Hygiene.
- 20-28** Saturday-Sunday. Spring holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.
- Apr 5** Monday. Last day to file *late* application or renewal of application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

COMMENCEMENT

- May 9** Sunday. Baccalaureate Service.
- 12** Wednesday. Conferral of May degrees and certificates.

SUMMER SESSION

- May 13** Thursday. Summer session begins for students in the postdoctoral orthodontics program.
- 31** Monday. Memorial Day. Holiday for students in all programs.
- June 28** Monday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.
- 29** Tuesday. Classes begin for students in the Division of Dental Hygiene.
- July 5** Monday. Independence Day. Holiday for students in all programs.
- 28** Wednesday. Classes end for second-year students in the postdoctoral orthodontics program.
- Aug 6** Friday. Classes end for students in the Division of Dental Hygiene.
- Sept 8** Wednesday. Summer session ends for students completing the first year in the postdoctoral orthodontics program.

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

1976-1977

- Aug 2** Monday.* Last day to apply or reapply for October degrees and certificates (see September 8).

AUTUMN TERM

- Sept 7-8** Tuesday-Wednesday.† Registration, for the academic year, including payment of fees, for D.D.S. degree candidates.
- 8** Wednesday.† Registration, for the academic year, including payment of fees, for first-year students in the postdoctoral orthodontics program.
- 8** Wednesday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.
- 8** Wednesday. Last day to file *late* application or renewal of application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.
- 9** Thursday. Classes begin for students in the Division of Dental Hygiene.
- 9** Thursday. Classes begin for first-year students in the postdoctoral orthodontics program.
- 13** Monday. Classes begin for D.D.S. degree candidates.
- 13** Monday. First day to change programs and to apply to audit courses.
- 15** Wednesday.† Registration for the academic year, including payment of fees, for all students in the postdoctoral programs except for first-year orthodontics students.
- 16** Thursday. Classes begin for all students in the postdoctoral programs except for first-year orthodontics students.
- Oct 15** Friday. Last day to change programs and to apply to audit courses. *No adjustment of fees for individual courses dropped after this date.*
- 27** Wednesday. Award of October degrees and certificates.
- 29** Friday. Last day to drop courses for students in the Division of Dental Hygiene.
- Nov 1** Monday. Academic holiday for students in the Division of Dental Hygiene.
- 2** Tuesday. Election Day. Holiday for students in all programs.

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

- Nov 5** Friday.* Last day to apply or reapply for January degrees and certificates (see December 10).
- 25-28** Thursday-Sunday. Thanksgiving holidays for students in all programs.
- Dec 10** Friday. Last day to file *late* application or renewal of application for January degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.
- 23** Thursday, through January 6, 1977, Thursday. Winter holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.
- 23** Thursday, through January 13, 1977, Thursday. Winter holidays for students in the Division of Dental Hygiene.

SPRING TERM

- Jan 14** Friday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.
- 17** Monday. Classes begin for students in the Division of Dental Hygiene.
- 20** Thursday. First day to change programs and to apply to audit courses.
- 26** Wednesday. Award of January degrees and certificates.
- 26** Wednesday. Last day to change programs and to apply to audit courses. *No adjustment of fees for individual courses dropped after this date.*
- Feb 21** Monday. Washington's Birthday. Holiday for D.D.S. degree candidates and for students in the postdoctoral programs.
- 21** Monday.* Last day to apply or reapply for May degrees and certificates (see April 11).
- 28** Monday. Last day to drop courses for students in all programs.
- Mar 13-20** Sunday-Sunday. Spring holidays for students in the Division of Dental Hygiene.
- 19-27** Saturday-Sunday. Spring holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.
- Apr 11** Monday. Last day to file *late* application or renewal of application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

COMMENCEMENT

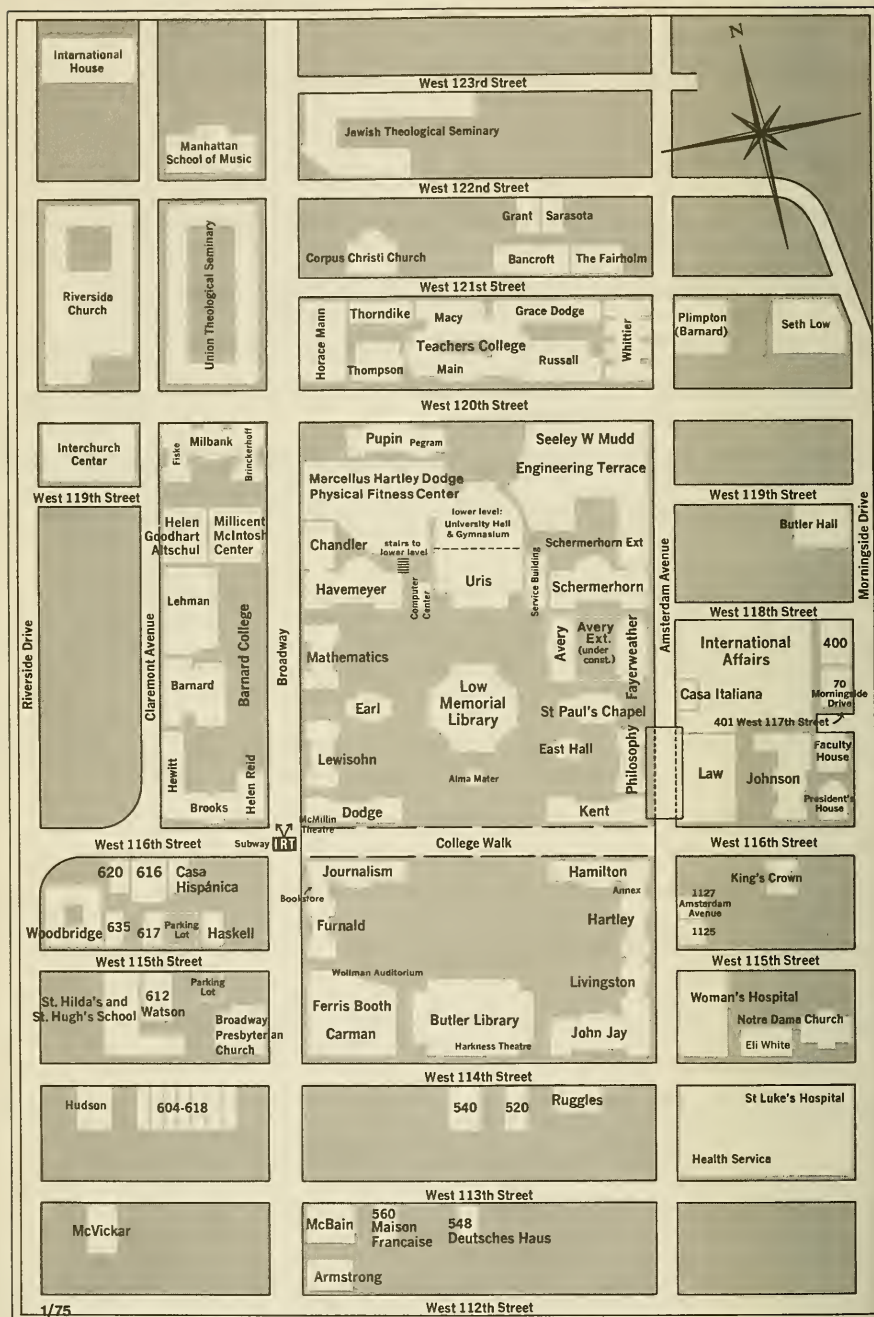
- May 15** Sunday. Baccalaureate Service.
- 18** Wednesday. Conferral of May degrees and certificates.

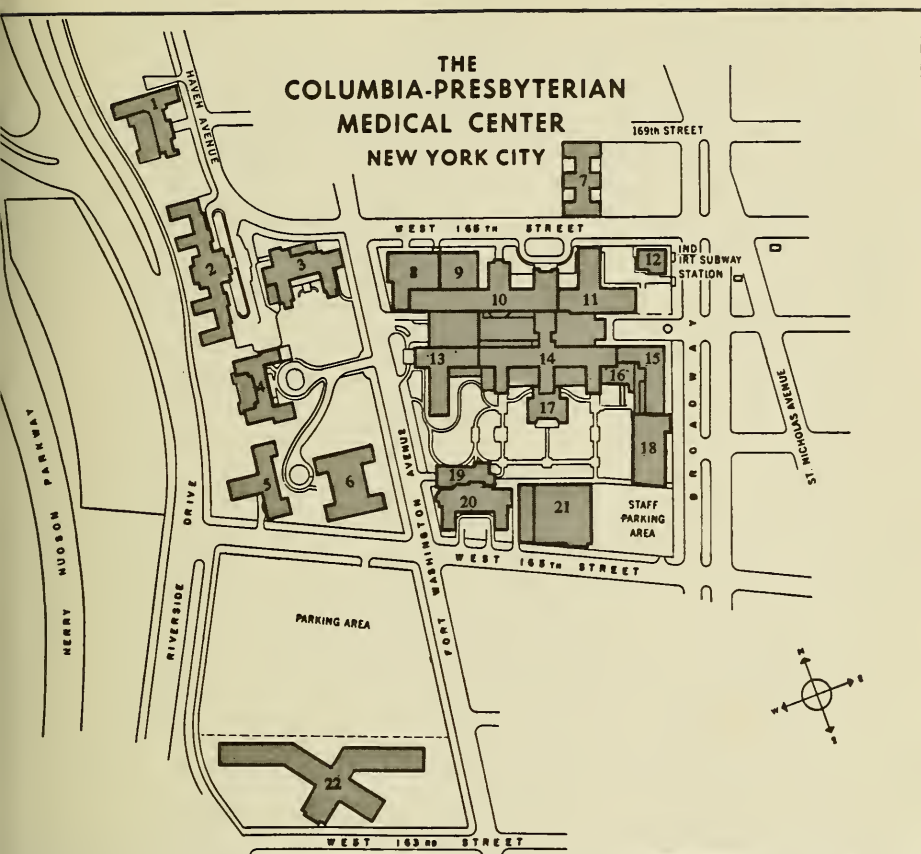
SUMMER SESSION

- May 19** Thursday. Summer session begins for students in the postdoctoral orthodontics program.
- 30** Monday. Memorial Day. Holiday for students in all programs.
- July 4** Monday. Independence Day. Holiday for students in all programs.
- 5** Tuesday.* Registration, including payment of fees, for students in the Division of Dental Hygiene.
- 6** Wednesday. Classes begin for students in the Division of Dental Hygiene.
- 27** Wednesday. Classes end for second-year students in the postdoctoral orthodontics program.
- Aug 12** Friday. Classes end for students in the Division of Dental Hygiene.
- Sept 14** Wednesday. Summer session ends for students completing the first year in the postdoctoral orthodontics program.

*Students allowed to register after the period specified must pay a late fee.

The Morningside Campus & Environs





- | | |
|--|---|
| 1. BARD HALL | 13. HARKNESS PAVILION |
| 2. N.Y. STATE PSYCHIATRIC INSTITUTE
PSYCHOANALYTIC CLINIC | 14. PRESBYTERIAN HOSPITAL
N.Y. ORTHOPEDIC HOSPITAL |
| 3. NEUROLOGICAL INSTITUTE OF NEW YORK | SLOANE HOSPITAL |
| 4. MAXWELL HALL | 15. BABIES HOSPITAL |
| 5. HARKNESS MEMORIAL HALL | 16. RADIOTHERAPY CENTER |
| 6. DANA W. ATCHLEY PAVILION | 17. PAULINE A. HARTFORD MEMORIAL
CHAPEL |
| 7. GEORGIAN NURSES RESIDENCE | 18. BABIES HOSPITAL RESEARCH,
TEACHING, AND OFFICE
ADDITION |
| 8. WILLIAM BLACK MEDICAL
RESEARCH BUILDING | 19/20. EDWARD S. HARKNESS
EYE INSTITUTE |
| 9. ALUMNI AUDITORIUM | 21. CENTRAL SERVICE BUILDING |
| 10. COLLEGE OF PHYSICIANS & SURGEONS | 22. FRANCIS DELAFIELD HOSPITAL,
N.Y.C. |
| 11. VANDERBILT CLINIC
SCHOOL OF DENTAL AND ORAL SURGERY | |
| 12. DEPARTMENT OF HEALTH
SCHOOL OF PUBLIC HEALTH
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SCHOOL OF DENTAL AND
ORAL SURGERY

Columbia University Bulletin

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School of Dental and
Oral Surgery

Columbia University Bulletin

D.D.S. Program

Postdoctoral Programs in Dental Specialties

Dental Hygiene Programs

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Objectives of the School

The School of Dental and Oral Surgery of Columbia University traces its origins to the year 1852, when the New York State legislature chartered the New York College of Dental Surgery. The College became the School of Dental and Oral Surgery of Columbia University in 1916, when dentistry was recognized as an integral part of the health sciences and dental education as a true university discipline. Many departments of the University contribute to and collaborate in the education of dental, postdoctoral, and dental hygiene students, thereby assuring them a broad foundation for sound professional development. As the guiding educational policy of Columbia University is the constant pursuit of excellence, the primary goal of the School of Dental and Oral Surgery is the preparation of graduates equipped to fulfill their obligations to the individual, to society, and to the profession. Dental education at Columbia has, over the years, provided leadership in the development of dentistry in the United States. Two examples of such leadership are (1) the establishment at Columbia University, in 1920, of the first organization devoted exclusively to research in dentistry; and (2) Professor William J. Geis' major critique of dental education in the United States in 1926, a critique which resulted in the acceptance by dental schools throughout the country of the basic policies and objectives developed at Columbia.

The University, realizing the need for even greater emphasis on the prevention of dental disease, constantly revises the curriculum. The curriculum is designed to increase the student's appreciation of the conceptual basis of dentistry. Adequate preparation for dentistry demands an understanding of broad biological principles integrated with the continually evolving body of scientific information in clinical dentistry and basic dental research. Undergraduate students are exposed to the full spectrum of dental problems as directed observers, and are then introduced to surgical and manipulative procedures and to methods of diagnosis and prevention that they must learn to execute with a high degree of competence. Emphasis is on the close relationship between systemic and oral health and disease, on systemic aberrations that affect the oral structures, on diseases of the mouth which may affect other organ systems, and on oral health as an essential component in total health.

Clinical training is broad in its scope. It is designed to produce competence in the recognition of oral disease and disorder, to stress the essential role of prevention in the control of oral disease, to establish the concept of maintaining the oral structures in optimal health, and to develop skill in planning and treatment.

It is necessary that the curriculum be considered only the initial framework for the student's lifetime participation in dental science and art. To this end, the curriculum cultivates in students those habits of independent thought and scholarship that encourage the continual evaluation of new knowledge. Although learning plays a vital role in the students' lives, their future development and attainment are most effectively assured by fostering a spirit of inquiry. Accordingly, there is a constant application of the scientific method, and undergraduate, postgraduate, and dental hygiene students are encouraged to participate in research.

Insofar as the population is rapidly increasing, knowledge of the processes of human growth and development and of the prevention of disease and abnormality must be amplified. In other branches of medicine, preventive research has resulted in an extensive reduction in infant and child mortality and in a marked increase in the life span of the individual. In dentistry, prevention of dental and oral disease and disorder must be effected in childhood to enable our youth to reach adulthood with complete, healthy dentitions and socially acceptable speech and expression. Also the increased life span presents many new physiological, pathological, and psychological problems which are peculiar to the aged and are open to investigation. In addition to undergraduate education, programs in graduate education and research are essential if these challenges to dentistry are to be met. The Faculty of the School of Dental and Oral Surgery regards high standards in both graduate education and research as prime objectives which follow directly from its objectives in undergraduate education.

Foresight on the part of the founders of the School of Dental and Oral Surgery has provided for the education of auxiliary personnel to augment dental health services. The Division

of Dental Hygiene was established as a program of courses for dental hygienists in the same year that the School became part of the University. The dental hygiene programs are designed to educate students toward an appreciation of their role in a professional society, toward an awareness of the ways in which their professional activities involve them in a wide range of value judgments, and toward expertise in clinical skills. Candidates are selected on the basis of scholarship, achievement, and an ability to prepare for leadership positions within the profession. The undergraduate programs in dental hygiene focus on fundamental knowledge and provide a base for graduate education. The graduate program extends and deepens knowledge and practice in a particular area of interest. All programs contribute to the preparation of a liberally educated dental hygienist who understands human and social factors, is expert in clinical skills, and can progress toward a significant and satisfying role within the profession.

A dental auxiliary utilization program trains dental students in the efficient use of auxiliaries. This program also explores new opportunities for the use of auxiliary personnel in an attempt to provide additional services to meet the expanding dental health needs of a growing population.

The University has realized that to accomplish these objectives requires the selection of students with superior abilities and academic qualifications, acquisition and maintenance of an excellent staff, and constant pursuit of knowledge through an active and diversified research program. Conscious of these needs, the School selects its students with care and maintains small classes, with a favorable ratio of staff to students. This ratio permits individual instruction and a stimulating relationship between student and instructor. The School has had, through the years, a distinguished staff which has demonstrated accomplishment in educational research and professional leadership, and which continues to prepare students for the expanding professional responsibilities of dentistry and the prevention of dental disease.

Programs of Study

D.D.S. Program

The curriculum of the School offers all basic science courses to both dental and medical students in the form of a "core" program. During the first year, the dental student takes all the required basic science subjects except pharmacology and neuroscience (second year). Also in the first year, the dental student is required to take three courses: (1) *Interdisciplinary Correlation D4001-D4002—Introduction to dentistry*, in which the student is exposed to the nature of dentistry and its significance, the means of delivery of dental care, and the kinds of preventive and treatment services which modern dentistry provides; (2) an interdisciplinary course in human behavior which deals with the psychological aspects of patient care; (3) a series of correlation clinics consisting of lectures and demonstrations designed to integrate medical and dental clinical subjects with the basic sciences.

The second year is essentially a "core" dental-science year, providing the full range of courses in oral biology, as well as the conceptual basis for the application of modern methods in the recognition, prevention, and treatment of dental disorders. Clinical observation, small group teaching, and frequent seminars provide the second-year student with a comprehensive view of dentistry. The program also includes integrated courses in dentistry (recognition, prevention, concepts of therapy, instrumentation, and clinical observation), as well as a course in psychosocial aspects of dentistry.

The third year is primarily clinical, with training in all phases of dentistry. Emphasis is on correlation of the various dental disciplines with one another and with the basic sciences. Prevention and comprehensive treatment are stressed while technical laboratory procedures are limited. The third- and fourth-year students function as a group, or module, in a setting similar to that of private practice, where total patient care is rendered by each student and supervision is under an interdisciplinary teaching team. This teaching team is supplied by the

professional staff of the divisions of Preventive Dentistry, Periodontics, Operative Dentistry, Prosthodontics, and Endodontics. Consultation services are made available by the divisions of Oral Diagnosis, Oral Surgery, and Orthodontics. The postdoctoral programs of endodontics and periodontics serve the undergraduate clinical modules by treating the difficult cases in their specialty areas.

During the fourth year the opportunity to choose electives in special areas of dentistry is made available. In order to increase their ability to view clinical cases in a comprehensive manner, fourth-year students spend time as student preceptors in the clinic and in seminars held in conjunction with underclassmen and the staff. Honors programs in endodontics, orthodontics, orofacial development, pedodontics, periodontics, research, and public health are offered to selected highly qualified students in their fourth year of study.

As a result of the constantly expanding body of knowledge in basic and dental sciences and the need for adequate clinic time, two summer sessions are required: (1) between the second and third years; (2) between the third and fourth years.

Throughout the entire course an effort is made to interrelate the different phases of dental learning by means of "correlative" and "combined" clinics in which the various departments and divisions cooperate in the discussion and demonstration of the same and related problems and thus treat the study of dentistry as a unit rather than a series of isolated branches of learning. At the same time an attempt is made to individualize instruction and to place responsibility as far as practicable upon the student for his or her own training. This is accomplished by the division of classes into modules and review sessions, and by the comprehensive case method of instruction.

Voluntary participation in research projects of the student's own choosing and in programs under the guidance of members of the faculty is earnestly encouraged. Members of the William Jarvie Society for Dental Research, the undergraduate research and honor society, undertake individual and team projects under the direction of members of the faculty. Lectures on the principles and practice of research are provided for the membership. In addition, students assist in the execution of studies being pursued by faculty members. A limited number of student research fellowships are available for summer work under the direction of the staff. The scope of student research includes critical reviews of the literature, clinical studies in the techniques of the various disciplines of dentistry, and the evaluation of newer therapeutic agents and dental materials. Work in the basic sciences is encouraged. For a complete description of this program, see *The D.D.S. Program* below.

Postdoctoral Programs

The School is authorized to grant certificates of training in special branches of dentistry. Study for the certificate of training includes advanced study in the clinical and basic science branches of dentistry approved by the Dean. At present, programs are offered to qualified graduates in dentistry who wish to prepare for specialization in endodontics, orthodontics, pedodontics, and periodontics. These programs are described in detail under *Postdoctoral Programs in Dental Specialities*.

Continuing Education

Consistent with the belief that a lifetime of learning is necessary for continued competence in the health profession and that dental education must be a continuum which extends throughout the professional career, the School of Dental and Oral Surgery offers a program of short courses of varying lengths on diverse subjects.

These continuing education courses are given at irregular times throughout the academic year and are announced by special brochures, notices in journals, and special mailings.

Courses may range in length from one day to one week or may meet one evening a week for an entire semester. They are designed to enable the practitioner to review and continue

his or her educational experience in fields where research and its clinical application present constantly changing concepts of prevention, diagnosis, and treatment. These short courses acquaint the participant with the latest advances in the various fields of dentistry.

A number of specially designated courses among those described under *The D.D.S. Program* and *Postdoctoral Programs in Dental Specialties* are offered for audit as Continuing Education Courses. These courses are available for attendance by non-matriculated practitioners and other professionals through the Division of Continuing Education and are described in the periodic Continuing Education Brochure and announcements. They are identified in this bulletin by an asterisk following the course title.

Inquiries concerning Continuing Education courses, schedules, and fees should be directed to the Director of Continuing Education, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, New York 10032. Telephone (212) 694-3865.

For Visitors and Visiting Scholars to the School of Dental and Oral Surgery

Qualified students are offered the opportunity for guided study, attendance, and observation of clinical and classroom education under the direction of a faculty member for variable periods of the school year not necessarily corresponding to regular academic intervals. Faculty members of other institutions may be granted visiting scholar privileges, which include auditing clinic and classroom courses (as approved by the course instructor), attending lectures, and participating (with the approval of the appropriate faculty member) in seminars.

This course is offered without credit. A special fee is determined after consultation with the Director of Continuing Education depending on the courses to be audited and the length of time to be spent in attendance. No official records of attendance are kept, and no transcript certifying attendance or work undertaken is provided by the registrar.

Arrangements for enrollment are made directly with the Director of Continuing Education at the address above.

Programs for Dental Hygienists

Columbia offers a bachelor's and a master's degree in dental hygiene. Candidates for the Bachelor of Science degree are admitted only in September under one of two classifications: Program A, for the student with two years of liberal arts college credit; Program B, for the student with two years of dental hygiene college credit. Candidates for the Master of Science degree are admitted in September, January, or July. The program for the M.S. degree provides advanced education in dental hygiene administration, research and teaching. Please consult *The Dental Hygiene Programs* for details of these programs.

Graduate Courses in the Basic Sciences

A limited number of fellowships are available to graduates of accredited dental schools. These fellowships offer opportunity for study in the following basic-science departments of the University: anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. For further information, address the Dean, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032.

Courses Leading to the Degree of Doctor of Philosophy

Graduation from accredited dental schools under the present curriculum of four academic years preceded by three acceptable predental college years is considered by the Graduate

School of Arts and Sciences of Columbia University to meet the general requirements for admission. There are additional admission requirements in certain departments. A student who is accepted by the Graduate School as a candidate for the degree of Doctor of Philosophy and who holds the Doctor of Dental Surgery degree from Columbia University may, with the consent of the Dean, offer the work done for the professional degree in lieu of points toward the fulfillment of the residence requirement for the academic degree. For further information see the bulletin of the Graduate School of Arts and Sciences, which may be obtained by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

Public Health for Dentists

A one-year course leading to a Master of Public Health degree is offered by the School of Public Health. The course is open to graduate students in dentistry. For further information regarding course content, registration, and fees, apply to the Director, School of Public Health, Columbia University, 600 West 168th Street, New York, N.Y. 10032.

A joint D.D.S./M.P.H. program is offered. For further information consult the Associate Dean for Academic Affairs, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032.

Facilities

The Dental Clinic

The School benefits in many ways through its association with the Medical Center. One of the functions of its clinic is the dental care of patients in the Center hospitals. Students are given a unique opportunity to gain experience in the diagnosis and care of those cases where a relationship exists between oral and general systemic diseases. The student also learns at first hand the problems of providing dental care for the hospitalized patient. The wards and out-patient departments of the Center give close contact and association with all branches of the health services.

The New Dental School Teaching Center

The School of Dental and Oral Surgery is in the process of complete renovation. A modern dental teaching center with expanded facilities for faculty, students, and patients will be completed in the Fall of 1977. This new facility will permit an increase in class size and provide totally integrated clinics for use by undergraduate dental students, postgraduate dental students, and dental hygiene students.

The Library

The Columbia University Health Sciences Library is housed in the new Health Sciences Center-Augustus Long Library. This eighteen-story, multimillion-dollar tower was completed in 1976 and provides a modern and efficient environment for study, teaching, and research. The four floors occupied by the library offer a comfortable atmosphere conducive to study, including such amenities as individual study carrels, group study and conference rooms, typing rooms, and a leisure reading lounge.

With more than 335,000 volumes and a staff of thirty-four, the Health Sciences Library is one of the largest medical center libraries in the United States. It is well able to serve the needs

of faculty, students, and researchers in the health science disciplines. More than 3,000 periodicals are received regularly. An entire floor of the library has been designated as a media center and is equipped with a variety of audiovisual materials. In addition to traditional reference services, the library offers computerized literature searching on several data bases, including MEDLARS. A library handbook and other materials describing library services are available on request.

Other Columbia libraries, located on the Morningside campus, are open to all students and faculty who carry Columbia identification cards. The main collection is housed in Butler Library; special and departmental collections are housed in other buildings on the campus.

Statement of Nondiscriminatory Policies

Columbia University admits students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, national and ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

Consistent with the requirements of Title IX of the Education Amendments of 1972, as amended, and Part 86 of 45 C.F.R. (to which Columbia University is subject), the University does not discriminate on the basis of sex in the conduct or operation of its education programs or activities (including employment therein and admission thereto). Inquiries concerning the application of Title IX and Part 86 of 45 C.F.R. may be referred to Ms. Beverly C. Clark, the University's Equal Opportunity Officer (309-C Low Memorial Library, New York, N.Y. 10027, telephone 212-280-3554), who has been designated as the University's Title IX Coordinator, or to the Director, Office for Civil Rights (Region II), 26 Federal Plaza, New York, N.Y. 10007.

Key to Course Listings

Each course number for the School of Dental and Oral Surgery consists of a capital letter followed by four digits and the term designation.

The capital letter indicates the School of Dental and Oral Surgery.

The level of the course is represented by *the first digit*:

- 3 Dental hygiene undergraduate course
- 5 First-year course for D.D.S. degree candidates
- 6 Second-year course for D.D.S. degree candidates; dental hygiene graduate course
- 7 Third-year course for D.D.S. degree candidates
- 8 Fourth-year course for D.D.S. degree candidates
- 9 Postdoctoral course

D.D.S. Degree Program

In the D.D.S. degree program, the *second and third digits* indicate the subject area:

- 00–04 Interdisciplinary correlation
- 05–09 Preventive dentistry
- 10–14 Community health
- 15–19 Dental auxiliary utilization
- 20–29 Endodontics
- 30–34 Operative dentistry
- 35–39 Oral biology
- 40–44 Oral surgery
- 45–49 Orofacial growth and development
- 50–59 Orthodontics
- 60–69 Pedodontics
- 70–79 Periodontics
- 80–84 Prosthodontics
- 85–89 Behavioral Science
- 90–99 Stomatology

Postdoctoral Programs

In the postdoctoral programs, the *second digit* indicates the course category:

- 0 Interdisciplinary correlation
- 2 Endodontics
- 5 Orthodontics
- 6 Pedodontics
- 7 Periodontics
- 9 Dental science (core and interdepartmental courses)

Dental Hygiene Programs

In Program A, the subject area is indicated by *the second digit*:

- 0 Basic science
- 1 Dental science
- 2 Education
- 3 Public health
- 4 Clinical dental hygiene

In Program B, the subject area is indicated by *the second and third digits*:

- 52 Dental science
- 54 Education
- 56 Public health
- 58 Clinical dental hygiene

Points of Course Credit: The number of points of credit that a course carries is given in bold-face type in the right margin of the course-title line.

Term Designations: X, Y, Z

An x following the course number indicates the course meets in the autumn term; a y indicates the spring term; and a z indicates the summer session.

Courses for Audit

An * following the course title indicates that a course is available for audit as described in the section *Continuing Education*.

The D.D.S. Program

Admission Requirements

Summary of the D.D.S. Program

Courses of Instruction

Admission Requirements

Candidates may apply after July 1 during the academic year preceding that for which they seek admission; the deadline for receipt of applications is December 15. Application is made through the American Association of Dental Schools Application Service (AADSAS). Application forms for this Service may be obtained from the Office of Admissions, from any other participating dental school, or directly from AADSAS, Suite 216, 1825 Connecticut Avenue N.W., Washington, D.C. 20009, telephone: (202)483-8921.

At the time of application to AADSAS, the applicant must send a check or money order for \$20, made payable to Columbia University, directly to the School of Dental and Oral Surgery. This fee, which covers the cost of processing the application, is required of all prospective students. Those wishing to be considered for a fee waiver should consult with the Office of Admissions and must supply the information necessary to support the waiver request. An application for admission will not be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the School. The fee is not refundable and is not credited toward tuition.

Required preparation: the bachelor's degree from an accredited American institution or its equivalent including the following courses (8 points of each): English composition and literature, physics, biology, inorganic chemistry, and organic chemistry. It is not necessary to complete the academic requirements before applying, but all requirements must be completed before registration. Students are discouraged from applying if they will only have three years of college, as preference is given to applicants with bachelor's degrees.

Recommended preparation: additional courses in chemistry, advanced courses in biology, courses in mathematics, foreign languages, sociology, history, and the fine and industrial arts. The admission of a student depends primarily on his preparation and intellectual capacity, but it also depends upon judgments of his character and health. The Committee looks favorably upon those applicants who have interest or experience in research.

Interviews: A personal interview is required for admission. Due to the large number of applicants, the interview is by invitation only from the Committee on Admissions. Candidates who are chosen for an interview will be notified by mail, and those applicants living on the West Coast will have the option of being interviewed in California. Further instructions will be given to those candidates by the Office of Admissions.

Dental Aptitude Tests: All applicants must take the Dental Aptitude Tests, which are conducted by the Council on Dental Education at various testing centers throughout the United States and Canada, no later than October of the year during which application is made. For further information, apply directly to the Division of Educational Measurements, Council on Dental Education of the American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

Acceptance Fee: After receiving notice of acceptance, the applicant must notify the Committee on Admissions that he or she intends to enroll according to instructions specified in the letter of acceptance. The acceptance fee is applied to the applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.

Combined Programs

With Barnard College. Under the "professional option" plan, students from Barnard College may receive the Bachelor of Arts degree from Barnard after the completion of three years of undergraduate work at Barnard and the first year in the School of Dental and Oral Surgery.

To be eligible for this privilege, before entering the School the student must have completed 90 points of academic work at Barnard (including all specific requirements), a major of 28 points, and the major examination or thesis.

With the School of General Studies. Students from the School of General Studies may exercise the professional option after the completion of 94 points (including all courses prescribed for the Bachelor of Science degree), not less than 64 of which must have been taken at Columbia University. For further information, students should consult with the School of General Studies Office of Admissions, 509 Lewisohn Hall on the Morningside Campus.

Summary of the D.D.S. Program

Because of revisions in curriculum, the following outline reflects the tentative program for the years 1977 – 1979.

First Year

Anatomy 101F, 102F – 102S
Behavioral science D5851
Biochemistry 101F
Embryology 101F – 102S
Interdisciplinary correlations,
D5001 – D5002

Microbiology 101F
Orofacial development D5450 – D5451
Pathology 101S
Physiology 101S

Second Year

Behavioral science D6851
Community health D6101
Endodontics D6201
Interdisciplinary correlations D6001
Microbiology 102S
Neural science 206F
Operative dentistry D6300 – D6301
Oral biology D6351, D6361,
D6371 – D6372
Oral surgery D6401, D6402

Orofacial development D6452, D6453,
D6454
Orthodontics D6501
Pedodontics D6651
Periodontics D6701
Pharmacology 250 – 251
Preventive dentistry D6051, D6052
Prosthodontics D6801
Stomatology D6902

Third Year

Behavioral science D7851
Community health D7101, D7102
Dental auxiliary utilization D7151
Endodontics D7201 – D7202
Operative dentistry D7301 – D7302
Oral biology D7351, D7361
Oral surgery D7401 – D7402, D7411,
D7421*
Orthodontics D7501 – D7502

Pedodontics D7651 – D7652
Periodontics D7701 – D7702
Preventive dentistry D7051 – D7052,
D7061 – D7062
Prosthodontics D7801 – D7802
Stomatology D7901 – D7902,
D7911 – D7912, D7921, D7931,
D7941 – D7942, D7943 – D7944

Fourth Year

Behavioral science D8851*
Community health D8111 – D8112*,
D8121*
Dental auxiliary utilization D8151 – D8152*,
D8161 – D8162*
Endodontics D8201 – D8202,
D8211 – D8212*
Interdisciplinary correlations
D8001 – D8002*
Operative dentistry D8301 – D8302
Oral biology D8361 – D8362
Oral surgery D8401*
Orofacial development D8451 – D8452*
D8461 – D8462*

Orthodontics D8511 – D8512*
Pedodontics D8661 – D8662*
Periodontics D8701 – D8702,
D8711 – D8712*
Preventive dentistry D8051 – D8052,
D8061 – D8062*
Prosthodontics D8801 – D8802
Stomatology D8901 – D8902†,
D8911 – D8912*

*Elective courses

†Identical to Stomatology D7901 – D7902

*Not required of students in areas of concentration

Areas of Concentration

Programs are available to qualified fourth-year students in the following areas: biological sciences, endodontics, orofacial development, orthodontics, pedodontics, periodontics, and public health.

Required Summer Clinics

These sessions are held in June and July.

Courses of Instruction

In the following course listings where the name of the subject or area of studies does not appear before the course number it is understood to be the same as the heading preceding each group of courses.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Anatomy

101F. Microscopic anatomy

Professor Gershon and staff. First year.

Lectures, conferences, and laboratory dealing with the analysis of biological structure necessary for understanding the function of cells, tissues, and organs.

102F-102S. Human anatomy

Professor Moss and staff. First year.

Regional dissections of the complete body, augmented by lectures stressing *functional* interpretations. Lectures correlate developmental anatomy with gross anatomy.

Embryology 101F-102S. Introduction to embryology

Professor Moss-Salentijn and staff. First year. (Formerly *Anatomy 108F*)

Lectures on selected topics in human developmental anatomy.

Neural Science 206F. Neural science

Professors Carpenter, Kandel, Kelly, and Rowland, and staff. Second year. (Formerly *Anatomy 206F*)

An interdisciplinary course designed to provide an integrated background in anatomy, behavior, biochemistry, and physiology of the nervous system.

Behavioral Science

Behavioral Science D5851x. Human behavior

Professors Wotman, Justman, Ms. Essig, and staff. First year.

Small group seminars utilizing common experiences to examine basic aspects of normal human behavior.

Behavioral Science D6851y. Human behavior

Professors Wotman, Justman, Ms. Essig, and staff. Second year.

Small group seminars utilizing common experiences to examine dentist-patient relationships in the school and in a practice environment.

Behavioral Science D7851y, D8851y. Behavioral problems in clinical practice

Professor Wotman, Ms. Diserens, Ms. Essig, and staff. Third and fourth years.

A case study course presented as part of the modular practice review. Examines the interpersonal issues in clinical care requiring the student to exercise judgement and determine a cause of action.

Biochemistry

101F. Introductory biochemistry

The staff. First year.

A survey of the chemical constituents of the mammalian cell and their metabolic activities; energy production in the cell, and its role in the synthesis of biological macromolecules; biosynthesis of nucleic acids and proteins; regulation of nucleic acid and protein synthesis.

Community Health

D6101x. Epidemiology

The staff. Second year.

Lectures and seminars in epidemiology and its role in disease prevention and community health. Major focus on dental and oral disease.

D7101y. Health care delivery systems and dental practice*

The staff. Third year.

Lectures in organization and financing of health care. Overview of public and private sectors of dental care, with emphasis on third party insurance, group practice models, peer review and PSRO, manpower, legislation, and projected programs.

D7102y. Extramural program

The staff. Third year.

Students are sent to community health programs to observe and participate in the delivery of dental care under a variety of local settings: neighborhood health centers, county health departments, and other agencies are utilized. Seminars, lectures, and panel discussions supplement experience.

D8111x-D8112y. Public health-community dentistry elective

The staff. Fourth year.

Students assigned to various extramural health centers, hospitals, and institutions to provide care, to identify with various types of health care delivery systems, and to increase their social sensitivity to various communities and population groups. Tutorial seminars for selected students from the School of Public Health, and for students enrolled in the DDS/MPH program, the M.S. degree program in the Division of Dental Hygiene, and senior dental students.

D8121y. Ethics, jurisprudence and forensic dentistry*

The staff. Fourth year.

An overview of the laws and regulations governing dental practice, professional responsibility, controls, practice agreements, and the role of forensic dentistry in modern dental practice.

Dental Auxiliary Utilization

D7151y. D.A.U.

Professor D. Kaplan and staff. Third year.

Lectures, demonstrations, and clinical experience in four-handed, sit-down dental service delivery; the effective utilization of chairside dental assistants; patient and dental team positioning; sequential instrumentation; equipment and space criteria.

D8151x-D8152y. D.A.U.

Professor D. Kaplan and staff. Fourth year.

Lectures and office visits present an introduction to dental practice management, the various systems of private practice, and dental economics. This section of the course prepares the student in the essentials of establishing, managing, and maintaining a dental practice.

D8161x-D8162y. T.E.A.M. elective

Professors Kafer and Handlers, and staff. Fourth year.

Lectures, seminars, and clinical experience in the principles and practices of management of expanded function auxiliaries.

Endodontics

D6201y. Endodontics theory and technique

Professors Leavitt, Naldorf, and Moreinis, and staff. Second year.

Lectures and seminars on the fundamentals of endodontics. Demonstrations and exercises in endodontic technique on extracted teeth.

D7201x-D7202y. Basic clinical endodontics**Professors Leavitt and Moreinis, and staff. Third year.**

Demonstrations and clinical experience in the practice of endodontics.

D8201x-D8202y. Advanced clinical practice**Professors Leavitt and Moreinis, and staff. Fourth year.**

Lectures and clinical experience in advanced problems in endodontic theory and technique.

D8211x-D8212y. Endodontics elective**Professor Greenfield and staff. Fourth year.**

Seminars, demonstrations, and clinical experience in advanced endodontic theory and technique.

Interdisciplinary Correlation

D5001x-D5002y. Introduction to dentistry**Professor Halpert and staff. First year.**

Lectures, demonstrations, clinical observation, and experience designed to define the scope of dentistry early in the career of the dental student. Correlation between the preclinical and clinical disciplines is an integral part of the course content.

D6001x. Introduction to dentistry**Professors Duboff and Fine, and staff. Second year.**

Lectures, demonstrations, clinical observation, and experience designed to permit the second-year student to experience the newly developing curriculum as early as possible. The course begins to supply the background needed to utilize fully the modifications in emphasis and course content in the ensuing clinical training.

D8001x-D8002y. Individualized elective**The staff. Fourth year.**

An elective program designed to meet the needs of the student in an area appropriate to his or her educational goals as arranged by the Third Year Class Committee.

Microbiology

101F. Biology of bacterial and mammalian cells**The staff. First year.**

Conferences.

102S. Pathogenic organisms**The staff. Second year.**

Conferences.

Operative Dentistry

D6300x-D6301y. Introductory operative dentistry**Professors Boelstler, Brzustowicz, and Scrivani, and staff. Second year.**

Lectures and laboratory exercises on the fundamentals of operative dentistry, including the etiology of dental caries and the biological approach to the technical procedures in the restoration of teeth. Periods of clinical observation are an integral part of the course.

D7301x-D7032y. Operative clinical practice**Professors Boyd, Cain, Boelstler, Brzustowicz, Santise, Scrivani, and staff. Third year.**

Introduction to the clinical practice of operative dentistry. Lectures, demonstrations, and clinical experience in the recognition of disease and related conditions. Prevention, treatment planning, and restoration to form and function on a comprehensive care basis.

D8301x-D8302y. Advanced clinical practice

Professors Boyd, Cain, Boelstler, Brzustowicz, Santise, and Scrivani, and staff. Fourth year.

A continuation of *Operative Dentistry D7301 - D7302*, with the addition of seminars in the special problems of operative dentistry, with emphasis on total patient care.

Oral Biology

D6351x. Biology of the oral tissues*

Professor Naidorf and staff. Second year.

Lecture and seminars intended to supplement the more general information and concepts of the first-year basic science courses with specific material related to dentistry. Topics include the biochemical nature of the oral tissues and secretions, neuromuscular mechanisms involved in mastication, deglutition, and speech; special sensation; pain; oral and pulpal microcirculation, and bone physiology.

D6361x. Oral microscopic anatomy and embryology

Professor Moss-Salentijn and staff. Second year.

Lectures, conferences, and laboratory on the detailed microscopic anatomy and development of the dental and associated orofacial structures.

D6371x-D6372y. Oral pathology

Professor Blake and staff. Second year.

Lectures, demonstrations, conferences, and laboratory work on diseases of the jaws, teeth, and soft tissues about the oral cavity. Emphasis on clinical manifestations of the various diseases.

D7351y. Functional anatomy of the head and neck*

Professor Crikelair and staff. Third year.

A concise review of the functional interrelationships in this region and their dynamic significance. Pertinent clinical topics are analyzed.

D7361y. Temporomandibular joint disorders*

Professor Marbach. Third year.

Lectures and clinical demonstrations on the diagnosis and treatment of diseases and disorders of the temporomandibular joints.

D8361x-D8362y. T.M.J. elective

Professor Marbach. Fourth year.

Oral Surgery

D6401x. Pain control

Professors Jaffe, Marder, and staff. Second year.

Lectures and demonstrations in the understanding of pain and its control by means of local anesthesia and sedation.

D6402y. Introduction to oral surgery

Professors L. Mandel, Minervini, Baurmash, and staff. Second year.

Lectures and demonstrations to prepare students for basic clinical oral surgery.

D7401x-D7402y. Basic oral surgery

Professors L. Mandel, Minervini, Baurmash, and Loscalzo, and staff. Third year.

Lectures and clinical experience in operative procedures in ambulatory oral surgery.

D7411x. Pain control*

Professors Jaffe, DiMango, Schube, and Winner. Third year.

Lectures, demonstrations, and practical application of pain control utilizing sedation, analgesia, and general anesthesia.

D7421y. Summer externship elective**The staff. Third year.**

Externship in selected metropolitan hospitals where the student is offered the opportunity to become involved with all aspects of dentistry as delivered in a hospital environment.

D8401y. Clinical clerkship at Bronx Veterans Administration Hospital, Harlem, Roosevelt, and St. Luke's Hospitals**Professors Friedman, Karmioli, Linz, Loscalzo, and Williams. Fourth year.**

Assignment of students to the above mentioned hospitals. Supervised by the Hospital Dental Service. Intent is to present a variety of hospital dental programs.

Orofacial Development

D5450x-D5451y. Oral anatomy and occlusion**Professors Lighter and Horowitz, and staff. Second year.**

Lectures and laboratory sessions in oral anatomy, dental morphology, phylogeny of the dentition, and dental occlusion.

D6452x. Orofacial growth and development**Professor Horowitz. Second year.**

Lectures in patterns of human development with emphasis on facial growth, the timing and sequence of eruption, phylogeny of the dentition, and the development of dental occlusion.

D6453x. Human genetics in dentistry**Professors Applebaum and Horowitz. Second year.**

Lectures designed to familiarize the student with principles of Mendelian heredity, cell division, inborn errors of metabolism, chromosomal anomalies, and the genetics of orofacial syndromes.

D6454x. Statistics**Ms. Diserens. Second year.**

Lectures and programmed instruction in basic biostatistics, including measures of central tendency, regression, correlation, Chi-Square, and comparison of samples.

D8451x-D8452y. Treatment of the handicapped program**Professor Horowitz and staff. Fourth year.**

Lectures and clinical experience in treating patients who have various types of handicapping conditions.

D8461x-D8462y. Orofacial development elective**Professor Horowitz and staff. Fourth year.**

An individualized study program in child development, with special emphasis on growth patterns of the dentofacial complex. The child development laboratory provides an opportunity for student experience in research design, exploration of genetic factors in dental anomalies and disease, practical applications of statistical analytic techniques, and clinical observation of various craniofacial birth defect syndromes.

Orthodontics

D6501y-D7501x-D7502y. Principles of orthodontics**Professor Di Salvo and staff. Second and third years.**

Lectures, seminars, laboratory, and clinic. Orthodontic fundamentals, with special emphasis on prevention of malocclusion by the early recognition and correction of the predisposing factors. Appliances used in preventive, interceptive and minor corrective orthodontic procedures are constructed in the laboratory and used in the clinic.

D8511x-D8512y. Orthodontic elective**Professor Di Salvo and staff. Fourth year.**

Seminars and clinic participation. A more detailed exposure to the etiology, diagnosis, case analysis, treatment planning, and clinical management of problems of malocclusion.

Pathology

101S. General and special pathology

Professors Blanc, Branwood, Cowen, Duffy, Gambino, Godman, King, Lane, Lates, Pirani, Richart, and Vogel. First year.

The same course as that given to medical students, including lectures, seminars, and laboratories, with emphasis on gross and microscopic examination of tissues, correlated with clinical findings.

Pedodontics

D6651y. Fundamentals of pedodontics and preventive dentistry

Professors Sweet, Davis, and staff. Second year.

Lectures on morphology of the primary tooth, cavity, preparation, stainless steel crown preparation, and clinical procedure. The preclinical lab involves operative procedures on primary teeth and the fabrication of a band and loop appliance, matrix band construction, amalgam placement and finishing.

D7651x-D7652y. Theory of pedodontics

Professors Sweet, Davis, and staff. Third year.

Lectures and clinical training in treatment planning. Complete dental care for children, including patient management of traumatized teeth, acid etch techniques, space maintainers, simplified tooth movement procedures, and preventative dentistry measures.

D8661x-D8662y. Pedodontic elective

Professors Rocco and Sweet. Fourth year.

Clinical practice in dentistry for children with more complicated management problems than those seen in the third year. Assignments to special clinic for training with special outpatients. Weekly seminars for case presentation and discussion of advanced pedodontic problems.

Periodontics

D6701y. Lectures and clinic

Professor Gottsegen and staff. Second year.

Lectures and seminars in the diagnosis, etiology, and treatment of periodontal diseases. Clinical practice in examination and documentation of clinical findings in the periodontal patient; prophylaxis, subgingival scaling and root planing; teaching and motivating patients to perform personal oral hygiene. The fundamentals of preventive periodontics are covered.

D7701x-D7702y. Clinical practice of periodontics

Professor Gottsegen and staff. Third year.

Lectures and seminars on periodontal surgery, occlusal traumatism, occlusal adjustment, specific periodontal diseases and infections, systemic background factors and interrelationships, methods of temporary stabilization of teeth, introduction to treatment planning, and case presentation both in seminar and clinic. Clinical practice in subgingival curettage, simple surgical techniques, occlusal adjustment by selective grinding, and temporary stabilization.

D8701x-D8702y. Advanced periodontics

Professor Gottsegen and staff. Fourth year.

Clinical experience is a continuation of Periodontics D7702. Lectures and seminars tracing the historic development of treatment methods, advanced surgical techniques, special therapeutic problems, fixed and permanent splinting and restorative dentistry for the periodontally involved dentition. A review of periodontal histopathology and physiology related to clinical experience; treatment planning, case management, and case presentation. Emphasis on the clinical management of more complex cases than in the third year.

D8711x-D8712y. Periodontics elective

Professor Gottsegen and staff. Fourth year.

One seminar and choice of one or two clinic sessions a week. Students participate in seminars with subject material researched through literature review and critical analysis. Clinical experience is directed toward enlarging and enhancing the usual four-year periodontics program through the assignment of difficult and complex cases of diagnosis, treatment planning, and therapeutic management. Opportunity and encouragement given for research.

Pharmacology

D50F-251S. Introduction to pharmacology

The staff. Second year.

Lectures on a wide variety of drugs. The effects of many of these drugs on man and other mammals are demonstrated in the laboratory. Emphasis on general pharmacological principles to assist the student in the rational use of drugs and in the evaluation of new remedies as they may be introduced.

Physiology

D01S. Human physiology

Professor Nocenti and staff. First year.

Lectures, conferences, demonstrations, and laboratory. The function of the various organ systems of the mammalian body and their interrelations.

Preventive Dentistry

D6051x. Scope of preventive dentistry

Professor I. D. Mandel and staff. Second year.

Lectures, laboratory, and clinical exercises on etiology, histopathology, measurement and prevention of the plaque diseases-caries and periodontal disease. Lectures and seminars on interrelationships between prevention and all areas of dentistry.

D6052y. Psychosocial aspects of preventive dentistry

Professors S. Wotman, and H. Goldman, and staff. Second year.

An interdisciplinary course consisting of lectures, seminars, and demonstrations illustrating the behavioral aspects of preventive dental care.

D7051x-D7052y. Practice of clinical preventive dentistry

Professors R. Goldman, and D. Abelson, and staff. Third year.

Clinical training in the procedures of preventive dentistry with emphasis on the plaque diseases.

D7061x-D7062y. Community preventive dentistry

Dr. Krieger and staff. Third year.

Clinical practice of preventive dentistry in a variety of community settings. Comparative observations at private and public installations.

D8051x-D8052y. Practice of clinical preventive dentistry

Professors R. Goldman, D. Abelson, and staff. Fourth year.

Integrating preventive dentistry into total patient care.

D8061x-D8062y. Preventive dentistry research elective

Professors I. D. Mandel, D. Fine, and staff. Fourth year.

Seminars and research project.

Prosthodontics

D6801y. Preclinical prosthodontics

Professors Lucca, Uccellani, Morea, and Vero, and staff. Second year.

Lectures and demonstrations on theory and procedures in the fabrication of fixed, removable, and complete prostheses. Wherever necessary for the learning of manipulative skills in preparation for clinical objectives, procedures are carried out on models in the laboratory by the student.

D7801x-D7802y. Core clinical prosthodontics

Professor Lucca and staff. Third year.

Lectures, demonstrations, and clinical experience in the biological principles and practice of the more simple cases in all phases of prosthodontics—fixed and removable dentures.

D8801x-D8802y. Advanced prosthodontics

Professor Lucca and staff. Fourth year.

Lectures, demonstrations, seminars, and advanced clinical experience in the biologic principles and practice of fixed and removable dentures. Lectures on different concepts of occlusion and other schools of thought on various aspects of prosthodontics including maxillofacial prosthesis are given by the staff and guest lecturers.

Stomatology

D6902y. Diagnosis and radiology lectures

Professors Donovan and Budowsky, and staff. Second year.

Lectures and discussions on history, physics, and electronics of radiology; studies on radiobiology, radiotherapy, radiation hazards, and protections; radiographic techniques and processing. Fundamentals of radiographic interpretation; diagnosis of pulpal diseases and associated abnormalities.

D7901x-D7902y. Clinical stomatology conferences*

Professors E. V. Zegarelli, Marder, Kutscher, and D. J. Zegarelli, and staff. Third year.

Required for third-year and postdoctoral students, but other students and members of the staff are urged to attend. Presentation by students of case histories of patients with diseases of the mouth and jaws which are of diagnostic interest and importance. General discussion of each case by and with the audience is encouraged.

D7911x-D7912y. Diagnosis lectures and clinic

Professors E. V. Zegarelli, Marder, and D. J. Zegarelli, and staff. Third year.

Lectures and discussions on diagnostic methods and techniques, diseases of the maxilla and mandible, tumors of the mouth, and diseases of the soft tissue. Clinical practice in mouth examination, taking of histories, diagnosis of mouth and jaw diseases, and treatment planning.

D7921y. Clinical cancer training

Professors E. V. Zegarelli, Kutscher, and Marder, and staff. Third year.

Lectures and clinical experience in the diagnosis and treatment of tumors of the head, face, and neck. The student is rotated for one week through the otolaryngology, radiotherapy, dermatology, and maxillofacial prosthesis clinics. Operating room experience in the surgical management of tumors is included.

D7931y. Radiology clinic

Professors Donovan and Budowsky, and staff. Third year.

Clinical practice in intraoral and extraoral radiography; demonstrations of temporomandibular joint panoramic and laminographic techniques.

D7941x-D7942y. General survey of medicine*

Professor Cosgriff and staff. Third year.

The important aspects of internal medicine, with reference to fundamentals as well as to recent diagnostic and therapeutic advances. Particular emphasis on overall medical problems and their implications for dentistry.

D7943x-D7944y. Treatment of diseases of the mouth

Professors E. V. Zegarelli, Marder, and Kutscher. Third year.

Lectures on the management and treatment of selected diseases of the mouth and jaws, including choice of drugs, models of administration, contraindications, and side reactions. The systemic implications of oral therapy, the dental management of systemically ill patients, and other medicodental relationships are emphasized.

D8901x-D8902y. Clinical stomatology conferences

Fourth year.

The same course as *Stomatology D7901 - D7902*.

D8911x-D8912y. Oral diagnosis, medicine, pathology, and surgery elective

Professors E. V. Zegarelli, L. Mandel, Minervini, and D. J. Zegarelli. Fourth year

Elective course for a limited number of students. An integrated program of advanced clinical training and experience in allied fields of diagnosis/oral medicine, oral pathology, and oral surgery.

Postdoctoral Programs in Dental Specialties

Admission Requirements

Summary of Programs

Courses of Instruction

Fellowship and Postdoctoral
Programs in Basic Sciences

Admission Requirements

To be admitted to any program, an applicant must be licensed to practice dentistry. Foreign students may be required to demonstrate sufficient knowledge of English and pass a clinical competence examination.

When to apply: before January 1, for admission in the following September. The Postdoctoral Admissions Committee gives preference to applicants who present evidence of one of the following qualifications: (a) two years of experience in dental practice (service as a dental officer in the federal services fulfills this qualification); (b) completion of an internship of twelve months or more; or (c) completion of at least twelve months of university graduate or postgraduate work in dentistry, a basic science, or an allied field.

Admission procedure: use the application form attached to this bulletin or write to the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032, for an application form, which must be filled out and returned. The completed form should be accompanied by the application fee of \$20. This fee is required of all prospective students. Payment may be waived, but only in certain individual cases of extreme hardship. Those wishing to be considered for a fee waiver on this basis should consult with the Postdoctoral Admissions Committee and should supply the information necessary to support the waiver request. An application for admission cannot be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the school. The fee is not refundable and is not credited toward tuition. As requested in the form, the applicant should ask each of the colleges or universities attended—for both preprofessional and professional studies—to send official transcripts of the record direct to the director of the postgraduate division to which the applicant is seeking admission. Official proof of current licensure should also be submitted.

Personal interview: if practicable, the Postdoctoral Admissions Committee may ask an applicant to come to the School for a personal interview.

Acceptance fee: within two weeks after receiving notice of acceptance, the applicant must notify the Committee that he or she intends to enroll and must send a check or money order for \$200 made payable to Columbia University. The acceptance fee is credited to the applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.

Summary of Postdoctoral Programs

These programs lead to a board-qualifying certificate of training and are based on the need for specially qualified practitioners of dentistry. They provide opportunities for advanced study in special fields. The education received may be credited toward specialization.

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time.

Program in Endodontics

A two-year, full-time program designed to prepare dentists for specialized practice in endodontics. Included are lectures, seminars, and laboratory courses in the basic sciences as well as in endodontics and related areas of dentistry. Clinical demonstrations, instruction, and experience in all phases of operative endodontics—conservative and surgical—are provided. Participants also receive experience in undergraduate endodontic teaching and in research.

Complete descriptions of the following courses are given under *Courses of Instruction* below.

First Year

Autumn Term

- D9900 Research methodology
- D9200 Theory and practice of endodontics
- D9204 Endodontic anatomy and technic
- D9205 Clinical practice in endodontics
- D9210 Review of endodontic literature
- D9905 Oral medicine and clinical oral pathology
- D9907 Clinical stomatology conferences
- D9911 Functional anatomy of the head and neck (*alternate years*)
- D9913 Radiology
- D9217 Surgical endodontics
- D9223 Controversies
- D9915 Psychiatry and psychosomatic medicine, and their interrelationship with dentistry
- D9951 Periodontal wound healing seminars
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9965 Bacteriology

Spring Term

D9201, D9206, D9211, D9906, D9908, D9218, and D9224 are offered in the spring term of the first year. They are continuations of courses offered in the autumn term.

- D9901 Cariology
- D9912 Anatomy of the head and neck
- D9215 Endodontic-periodontic relationships
- D9914 Theory and practice of periodontics
- D9923 Pharmacotherapeutics (*alternate years*)

Summer Session

Endodontics D9209 Clinical practice in endodontics

Second Year**Autumn Term**

D9202, D9207, D9212, D9219, and D9909 are offered in the second year. They are continuations of courses offered in the first year.

- D9216 Pulp biology
- D9221 Thesis
- D9225 Controversies

Spring Term

D9203, D9208, D9213, D9220, D9222, D9226, and D9910 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9952 Periodontal wound healing seminars
- D9923 Pharmacotherapeutics (*alternate years*)

Program in Orthodontics

A two-year, full-time program designed to prepare dentists for specialization in orthodontics. Instruction in the basic and applied sciences, in related medical subjects, and in the theory and practice of orthodontics is provided by lectures, seminars, laboratory exercises, and clinical practice. Emphasis is on diagnostic procedures and treatment planning and the application of clinical methods best designed to meet the treatment objectives for the individual patient.

Instruction includes the theory and practice of treatment with various appliances: removable, labiolingual, twinwire, extraoral forces, edgewise, and the Begg Appliance. Satisfactory completion of clinical training under the direction of members of the orthodontic staff is required.

See the Academic Calendar for registration dates and for dates on which classes begin.

Complete descriptions of the following courses are given on pages under *Courses of Instruction*, below.

First Year**Autumn Term**

- D9900 Research methodology
- D9956 Introduction to orthodontics
- D9500 Orthodontic technic
- D9501 Clinical orthodontic practice
- D9515 Orthodontic literature review
- D9507 Biomechanics
- D9957 Cephalometrics, growth and development
- D9958 Orthodontic diagnosis and treatment planning
- D9521 Theory and practice of orthodontics
- D9511 Dental anthropology and evolution

- D9907 Clinical stomatology conferences
- D9911 Functional anatomy of the head and neck
- D9913 Radiology
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9519 Dental materials

Spring Term

D9502, D9512, D9516, D9522, D9908, and D9959 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9901 Cariology
- D9903 Orofacial growth and development
- D9525 Thesis
- D9912 Anatomy of the head and neck
- D9914 Theory and practice of periodontics
- D9919 Genetics

Summer Session

D9503 and D9526 are offered in the summer session. They are continuations of courses offered in the spring term.

Second Year

Autumn Term

D9527 is offered in the autumn term and is a continuation of a course offered in the summer session; *D9909* is offered in the second year and is a continuation of a course offered in the first year.

- D9904 Craniofacial anomalies
- D9504 Clinical orthodontic practice
- D9517 Orthodontic literature review
- D9916 Temporomandibular joint disorders
- D9917 Temporomandibular joint dysfunction and maxillofacial rehabilitation
- D9523 Theory and practice of orthodontics
- D9509 Orthodontic diagnosis and treatment planning
- D9905 Oral medicine and clinical oral pathology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationship with dentistry

Spring Term

D9505, D9510, D9518, D9524, D9528, D9906, D9910, and D9918 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9902 Pediatrics related to dentistry
- D9508 Practice management in orthodontics
- D9513 Public health aspects of orthodontics
- D9514 Oral and maxillofacial surgery related to orthodontics
- D9961 Maxillofacial follow-up clinic
- D9955 Speech pathology and therapy
- D9520 The cleft-palate patient

Summer Session

D9506 and D9529 are offered in the summer session. They are continuations of courses offered in the spring term.

Program in Pedodontics

The two-year, full-time Pedodontic Program leading to a Certification of Training approved by the Council of Dental Education includes courses in basic sciences, developmental psychology, and dental and medical courses in various aspects of pedodontics and care for the handicapped patient.

During the two years, there is emphasis on clinical practice, utilizing behavior modification and training in analgesia, I.V. sedation, and operating room procedures. Clinical aspects of pedodontics are stressed in conjunction with preventive dentistry concepts and growth development of the child. An integral part of the program is a literature review of classical pedodontic readings and case presentations. Orthodontic techniques are stressed. The entire course is designed to facilitate taking the Specialty Board of the American Board of Pedodontics. The student conducts an investigation of a pedodontic nature and it is presented in the form of a thesis. Undergraduate teaching rotation is required in the second year.

A United Cerebral Palsy Clinical Fellowship is available during the second year of this program to students who demonstrate superior ability. The fellowship carries an annual stipend and is sponsored by the United Cerebral Palsy Research & Education Foundation, Inc.

Descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn Term

- D9900 Research methodology
- D9904 Craniofacial anomalies
- D9905 Oral medicine and clinical oral pathology
- D9907 Clinical stomatology conferences
- D9911 Functional anatomy
- D9913 Radiology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationships with dentistry
- D9916 Temporomandibular joint disorders
- D9917 Temporomandibular joint dysfunction and maxillofacial rehabilitation
- D9920 Histology and embryology
- D9921 Statistics
- D9956 Introduction to orthodontics
- D9957 Cephalometrics: growth and development
- D9602 Clinical practice in pedodontics
- D9606 General anesthesia technique at Roosevelt
- D9610 Nitrous-oxide oxygen conscious sedation analgesia at Blythedale
- D9614 Satellite clinic at Human Resources
- D9620 Orthodontics for the handicapped patient
- D9624 Clinic for the handicapped child
- D9631 Thesis
- D9636 Pedodontic guest lecture seminar series
- D9643 Review of Literature for the Academy of Pedodontic Boards
- D9650 Undergraduate pedodontic instruction
- D9655 Satellite clinic at the Institute of the Blind

Spring Term

D9601, D9603, D9607, D9611, D9615, D9621, D9625, D9632, D9637, D9644, D9651, D9656, D9906, and D9908 are offered in the spring term. They are continuations of course offered in the autumn term.

- D9652 Dental Materials
- D9901 Cariology
- D9902 Pediatrics related to dentistry
- D9914 Theory and practice of periodontics
- D9918 Temporomandibular joint dysfunction and maxillofacial rehabilitation
- D9923 Pharmacotherapeutics

Second Year

Autumn Term

- D9909 Clinical stomatology conference
- D9604 Clinical practice in pedodontics
- D9608 General anesthesia technique at Roosevelt
- D9612 Nitrous-oxide oxygen conscious analgesia at Blythedale
- D9616 Satellite clinic at Human Resources
- D9618 Satellite clinic at the Institute for the Blind
- D9622 Orthodontics for the handicapped patient
- D9626 Clinic for the handicapped child
- D9628 Preventive and interceptive orthodontic clinic
- D9630 Intravenous psychosedation clinic
- D9633 Thesis
- D9638 Pedodontic guest lecture seminar series
- D9645 Review of literature for the Academy of Pedodontic Boards
- D9653 Undergraduate pedodontic instruction

Spring Term

D9605, D9609, D9613, D9617, D9619, D9623, D9627, D9629, D9634, D9639, D9646, D9654, and D9910 are offered in the spring term. They are a continuation of courses offered in the autumn term.

- D9635 Methodology in preventive dentistry
- D9640 Orthodontic technique laboratory
- D9642 Child developmental psychology
- D9647 Neurological conditions
- D9649 Anesthesiology and related pharmacotherapeutic measures

Program in Periodontics

The two-year program of courses in the theory and practice of periodontology prepares the dentist for specialized service; the curriculum also includes instruction in the basic biological and related medical sciences. Training in the scientific approach to a problem is provided in an atmosphere of intellectual inquiry. Exposure to the application of a variety of therapeutic approaches is offered, and the student is encouraged to apply fundamental biological knowledge and judgment to clinical problems. Students are also given an opportunity to assist in clinical instruction of undergraduate dental students. This program is designed to fulfill the necessary education requirements of the American Board of Periodontology for candidacy in

a postdoctoral specialty. Full credit is given for all courses that the student completes even though he or she does not continue into the second year of advanced study.

Complete descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn Term

- D9900 Research methodology
- D9700 Clinical practice in periodontics
- D9905 Oral medicine and clinical oral pathology
- D9907 Clinical stomatology conferences
- D9911 Functional anatomy of the head and neck (*alternate years*)
- D9913 Radiology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationship with dentistry
- D9965 Bacteriology
- D9704 Seminars in periodontics
- D9708 Seminars in periodontics: periodontal therapy
- D9962 Seminars in periodontics: plaque, calculus, microbiology, and immunology
- D9720 Treatment planning in periodontics
- D9951 Periodontal wound healing seminars
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9724 Minor tooth movement in periodontics
- D9725 Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics
- D9727 Histology and histopathology of periodontal structures

Spring Term

D9701, D9705, D9709, D9721, D9726, D9728, D9906, D9908, and D9952 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9901 Cariology
- D9912 Anatomy of the head and neck
- D9923 Pharmacotherapeutics (*alternate years*)
- D9963 Plaque and calculus
- D9713 Periodontal surgical conference

Second Year

Autumn Term

D9702, D9710, D9714, D9722, D9953, and D9909 are offered in the second year. They are continuations of courses offered in the first year.

- D9716 Seminars in periodontics: journal club
- D9718 Seminars in periodontics: the social science and cultural background of health care, dentistry, and periodontics
- D9729 Restorative dentistry related to periodontics
- D9916 Temporomandibular joint disorders

Spring Term

D9703, D9711, D9717, D9719, D9723, D9730, D9954, and D9910 are offered in the spring term. They are continuations of courses offered in the autumn term.

D9731 Practice management in periodontics

D9923 Pharmacotherapeutics (*alternate years*)

Courses of Instruction

In the following course listings where the name of the subject or area of studies does not appear before the course number it is understood to be the same as the heading preceding each group of courses.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Dental Science (Core Courses)

D9900x. Research methodology*

Professor Naldorf and staff.

A general consideration of the philosophy and methodology of basic and applied research, including a discussion of the art of scientific investigation; potential areas of research in the basic sciences and clinical dentistry; the use of the library; the role of statistics; techniques of clinical research; and writing for scientific literature. *One one-hour lecture a week.*

D9901y. Cariology*

Professor I. Mandel.

Lectures in the etiology and histopathology of dental caries, including recent advances in caries prophylaxis. *Seven lecture hours.*

D9902y. Pediatrics related to dentistry

Professor Lorin.

A synopsis of pediatrics. Certain peculiarities of growing children of significance in dentistry. The basic concepts and practical aspects of psychological care of children. *One two-hour and one one-hour demonstration a week.*

D9903y. Orofacial growth and development*

Professor Horowitz.

Lectures on childhood and adolescent growth: development of the dentition; hereditary and environmental influences on growth; craniofacial malformations; and prediction of facial growth. *Sixteen lecture hours.*

D9904x. Craniofacial anomalies

Professor Horowitz.

Discussion of various craniofacial anomalies, with emphasis on etiology, morphology, development, and clinical management. *Eight seminar hours.*

D9905x-D9906y. Oral medicine and clinical oral pathology*

Professors E. V. Zegarelli and D. Zegarelli.

A comprehensive description and discussion of the diseases of the mouth, jaws, and related structures. The application of basic scientific knowledge is emphasized in order to provide a clearer and more practical understanding. *One two-hour lecture a week for thirty-three weeks.*

D9907x-D9908y, D9909x-D9910y. Clinical stomatology conferences

Professor E. V. Zegarelli and staff.

These weekly conferences consist of the presentation of case histories by fourth-year students of patients with interesting and challenging diseases of the mouth and jaws. The diagnosis and treatment of each case is discussed by and with the audience, the latter including second-, third-, and fourth-year undergraduate dental students; postdoctoral students; dental hygienists; visiting interns; residents; practitioners; and members of the faculty. *Weekly one-hour conferences.*

D9911x. Functional anatomy of the head and neck*

Professor Moss

A concise review of the functional interrelations and their dynamic significance. Pertinent clinical topics are analyzed from this viewpoint. *One two-hour session a week.*

D9912y. Anatomy of the head and neck

Professor Sollmene.

Lectures and dissection. *Three hours a week for sixteen weeks.*

D9913x. Radiology

Professor Donovan.

The principles of dental x-ray technique, with emphasis on lateral, anteroposterior, sinus, and temporomandibular joint techniques. *Eight two-hour lectures and two three-hour clinical sessions.*

D9914y. Theory and practice of periodontics

Professor Gottsegen.

Four one-hour lectures.

D9915x. Psychiatry and psychosomatic medicine, and their interrelationship with dentistry*

Professor Lefer.

Basic concepts of psychodynamics, psychopathology, and psychosomatic medicine presented with clinical material showing their synthesis with dentistry. *Eleven two-hour lectures.*

D9916x. Temporomandibular joint disorders

Professor Marbach and staff.

Lectures, discussions, and demonstrations on the diagnosis and treatment of temporomandibular joint disorders. Includes a study of the clinical physiology and pathology of facial pain, and the relationship between systemic diseases and facial pain syndromes. *Ten one-hour lectures plus demonstrations.*

D9917x-D9918y. Temporomandibular joint dysfunction and maxillofacial rehabilitation

Professor Marbach and staff.

A review of skeletal mechanics of the temporomandibular joint and masticatory musculature in its relation to the head and shoulder girdle. The diagnosis of temporomandibular joint pain in terms of muscle spasms and aberration from normal occlusion. *One one-hour lecture or seminar and one three-hour clinic session a week.*

D9919y. Genetics

Professors Appelbaum and Horowitz

Lectures and demonstrations on principles of genetics. *Six hours.*

D9920x. Histology and embryology

Professor Moss-Salentijn.

Growth and development of the jaws and face, and microscopic anatomy of the teeth and surrounding and related tissues of the oral cavity. Application to clinical dentistry. *One one-hour lecture a week for 10 weeks, followed by one two-hour seminar a week for ten weeks.*

D9921x. Statistics

Professor Horowitz.

A review of fundamental principles in statistics, with emphasis on the interpretation of dental statistics. Some attention to current concepts of caries etiology and control. *Ten one-hour lectures.*

D9922x. Physiology

Professors Di Salvo and I. Mandel.

A review of the physiological principles underlying certain oral functions, with special emphasis on sensorimotor, and secretory activity. *Fifteen one-hour lectures.*

D9923y. Pharmacotherapeutics*

Professor Kahn.

Given in alternate years; not given in 1977-78.

Lectures on the application of pharmacologic principles of therapeutics in dental practice. *Eleven one-hour lectures.*

Dental Science (Interdepartmental Courses)

D9951x-D9952y, D9953x-D9954y. Periodontal wound healing seminars

Professor Morris.

The basic principles of wound healing are applied to the special problems of repair presented to dental and periodontal structures. These tissues are studied as they react to the various methods of therapy. *One one-hour seminar a week.*

D9955y. Speech pathology and therapy

Professor Mysak.

Language and speech development in children, and speech pathology and therapy in the patient with oral impairment. *Three two-hour lectures.*

D9956x. Introduction to orthodontics

Professor Nahoum and staff.

Consists of a series of lectures which survey the entire field of orthodontics. Provides the student with background information that is required in order to begin treating patients and prepares him for a more detailed study of laboratory and clinical procedures. *Thirty lecture hours.*

D9957x. Cephalometrics: growth and development

Professor Nahoum.

A survey of growth and development of the dentition and face, including the theory and practice of taking standardized head roentgenograms utilizing a cephalostat, laboratory procedure in the methods of making tracings, and the clinical evaluation of headfilms. *Ten one-hour lectures and four three-hour laboratory sessions.*

D9958x-D9959y. Orthodontic diagnosis and treatment planning

Professor Di Salvo and staff.

One one-hour seminar a week.

D9961y. Maxillofacial follow-up clinic

Professors Crikelair and Rankow.

Fifteen two-hour sessions.

D9962x. Seminars in periodontics: plaque and calculus

Professors Salkind, Oshrain, and Fine, and staff.

Intensive and critical review of the literature relating to formation, structure, chemistry, and bacteriology of plaque and calculus; leading to and covering the microbiology and immunology of periodontal disease. *One-and-one-half hours a week for twenty weeks.*

D9963x. Plaque and calculus

Professors I. Mandel, Siegel, and Weinstein.

The histologic, bacteriologic, and biochemical aspects of supra- and sublingual plaque and calculus formation are discussed and related to the nature of the salivary and crevicular fluids. *Six two-hour lectures.*

D9965x. Bacteriology*

Professor Naidorf.

Principles of bacteriology and immunology, with particular reference to applications in aseptic procedures and the control of infection in endodontics and periodontics. *Lecture: thirty-two hours; laboratory: forty-eight hours.*

Endodontics

D9200x-D9201y, D9202x-D9203y. Theory and practice of endodontics

Professors Leavitt, Naidorf, and Ambider.

Lectures and seminars on past and current theory in endodontics and its relation to modern endodontic practice. Guest lecturers will speak on current research developments in the field of endodontics or related disciplines. *Ninety hours.*

D9204x. Anatomy and technic of endodontics**Professor Moreinis.**

Lectures and laboratory sessions on the anatomy of roots, pulp chambers, and root canals. Lectures and demonstrations on endodontic armamentarium and materials. Lectures, demonstrations, and technic sessions on the chemo-mechanical preparation and filling of canals of extracted teeth. *Forth-five hours.*

D9205x-D9206y, D9207x-D9208y, D9209z. Clinical practice in endodontics**The staff.**

Supervised clinical experience in all phases of operative endodontics. During the second year, instruction and experience teaching undergraduate clinical endodontics is included. *Average of 140 hours a term.*

D9210x-D9211y, D9212x-D9213y. Review of endodontic literature**Professors Leavitt, Naidorf, and Ambider.**

Intensive discussion of past and current literature in endodontic and related fields. Reports by students on reading assignments. *One-hundred-ninety hours.*

D9215y. Endodontic-periodontic relationships**Professor Leavitt.**

The theory and treatment of combined endodontic-periodontic problems. *Ten seminar hours.*

D9216y. Pulp biology**Professors Fine, Greenfield, Moss-Salentijn, and Naidorf.**

Normal and pathological pulps. Biological background for pulpal injury, inflammation, and repair. *Sixteen two-hour sessions and demonstrations.*

D9217x-D9218y, D9219x-D9220y. Surgical endodontics**Professor Rothenberg and staff.**

Lectures, demonstrations, and clinical experience in problems requiring combined endodontic and surgical treatment. *Lecture: thirty hours. Clinic: eighty hours.*

D9221x-D9222y. Thesis**Professor Naidorf.**

The student conducts an investigation dealing with a subject of his choice and approved by the program director concerned. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

D9223x-D9224y, D9225x-D9226y. Endodontic Controversies**Professor Vogel.**

All aspects of current and past controversies in endodontics are explored in seminar sessions. *One hour lectures all year.*

Orthodontics

D9500x. Orthodontic technic**Professor Di Salvo and staff.**

Intensive technical instruction and lectures in the assembling and manipulation of typodonts of removable, labiolingual, edgewise, extraoral forces, twinwire and Begg appliances, retainers, and bite plates. *Six three-hour sessions a week for eleven weeks.*

D9501x-D9502y and D9503z. Clinical orthodontic practice**Professor Di Salvo and staff.**

Supervised clinical practice in the use of removable, labiolingual, edgewise, extraoral forces, twinwire and Begg appliances, retainers, and bite plates. *Six three-hour sessions a week.*

D9504x-D9505y and D9506z. Clinical orthodontic practice**Professor Di Salvo and staff.**

A continuation of D9501-D9502 and D9503.

D9507x. Biomechanics**Professor Blechman.**

Seven two-hour lectures.

D9508y. Practice management in orthodontics**Professor Ruderman.**Lectures on the administration of orthodontic practice. *Five two-hour lectures.***D9509x-D9510y. Orthodontic diagnosis and treatment planning****Professor Di Salvo and staff.***One one-hour seminar a week.***D9511x-D9512y. Dental anthropology and evolution****Professor Oppenheimer.**Seminars on growth and development of bone are included. *Fifteen two-hour lectures.***D9513y. Public health aspects of orthodontics****Professor Huettner.***Four two-hour lectures.***D9514y. Oral and maxillofacial surgery related to orthodontics****Professor Rankow.**Practical considerations of unerupted teeth, extreme prognathism, intermaxillary wiring, and cleft-palate cases. *Four two-hour lectures.***D9515x-D9516y. Orthodontic literature review****Professor Nahoum.***One two-hour seminar a week.***D9517x-D9518y. Orthodontic literature review****Professor Kohler.***One two-hour seminar a week.***D9519x. Dental materials****Professor Ayers.**Lectures and laboratory on the physical and chemical properties of the metals and other materials used in orthodontics and pedodontics, with clinical applications. *Six one-hour lectures.***D9520y. The cleft-palate patient****Professors Luban, J. Kaplan, Bruno, and Cole.**Lectures on the various problems in the treatment of the cleft-palate by the orthodontist. Coordination with related specialties is emphasized. *Six two-hour lectures.***D9521x-D9522y. Theory and practice of orthodontics****Professor Di Salvo and staff.**Lectures, discussions, and demonstrations, in which theory is correlated with clinical observation and practice. *Three one-hour lectures a week.***D9523x-D9524y. Theory and practice of orthodontics****Professor Di Salvo and staff.**Continuation of D9521 - D9522. *One one-hour lecture a week.***D9525y-D9526z, D9527x-D9528y, D9529z. Thesis****Professor Di Salvo.**

The student conducts an investigation dealing with a subject of his choice and approved by the program director. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

Pedodontics**D9600x-D9601y. Pedodontic theory: technique and practice****Professor Sweet.**

References and visual education on basic concepts of operative procedures, pulp therapy, and space maintenance.

D9602x-D9603y, D9604x-D9605y. Clinical practice in pedodontics
Professors Sweet, Davis, Rocco, and Metcalf.

Supervised clinical practice in all phases of pedodontics and related disciplines.

D9606x-D9607y, D9608x-D9609y. General anesthesia technique at Roosevelt
Professor Bachman.

Operating room techniques and their utilization for implementing pedodontic therapy.

D9610-D9611y, D9612x-D9613y. Nitrous-oxide oxygen conscious sedation
analgesia at Blythedale
Professors Rosenberg and Piesman.

The use of nitrous-oxide and oxygen psycho-sedative techniques for the management of the pedodontic patient.

D9614x-D9615y, D9616x-D9617y. Satellite clinic at Human Resources
Professor King.

Dental procedures for the handicapped pedodontic patient.

D9655x-D9656y, D9618x-D9619y. Satellite clinic at the Institute for the Blind
Professor Cohen.

Dental procedures for the pedodontic patient with blindness and other handicapping conditions.

D9620x-D9621y, D9622x-D9623y. Orthodontics for the handicapped patient
Professor Koster.

Orthodontic practice for the handicapped child and adult.

D9624x-D9625y, D9626x-D9627y. Clinic for the handicapped child
Professor Rocco.

Special dental clinic for the handicapped child with emphasis on management.

D9628x-D9629y. Preventive and interceptive orthodontic clinic
Professor Valentine.

Theory and application of preventive and interceptive orthodontic techniques, including cephalometric and related diagnostic evaluations for the pedodontic patient.

D9630x. Intravenous psychosedation clinic
Professors Mandel and Minervini.

Techniques of intravenous psychosedation under the auspices of the Oral Surgery Department for augmentation of patient management.

D9631x-D9632y, D9633x-D9634y. Thesis
Professor Sweet.

The graduate student conducts an investigation of an approved area of interest in the field of pedodontics.

D9635y. Methodology in preventive dentistry
Professor I. Mandel.

Under the direction of the Department of Preventive Dentistry, seminars and projects pertinent to the prevention of dental pathology are conducted.

D9636x-D9637y, D9638x-D9639y. Pedodontic guest lecture seminar series
Professor Sweet.

Prominent individuals in the field of pedodontics present two hour seminars on various contemporary topics.

D9640y. Orthodontic technique laboratory
Staff.

A laboratory course designed to instruct the student in the principles of design and construction of various orthodontic appliances.

D9641y. Nutrition
The staff, Institute of Human Nutrition.

Study of human nutrition with emphasis on the requirements of normal growth and development and the preventive of oral pathology.

D9642y. Child developmental psychology
Professor Davis.

A literature review and seminar series designed to prepare the pedodontist to understand and implement the various techniques of behavior management.

D9643x-D9644y, D9645x-D9646y. Review of literature for the Academy of Pedodontic Boards
Professor Metcalf.

Classical review of the pedodontic literature.

D9647y. Neurological conditions
Professor Rocco.

An overview of the human nervous system and pathologies with reference to clinical expectations and management.

D9649y. Anesthesiology and related pharmacotherapeutic measures
Professor Griggs.

Theoretical background for the use of pharmacotherapeutic adjuncts to therapy.

D9650x-D9651y, D9653x-D9654y. Undergraduate pedodontic instruction
Professor Sweet.

Instruction by graduate students of the undergraduate student in clinical pedodontics.

D9652y. Dental materials
Professor Davis.

Theoretical aspects of the selection and use of the various restorative materials in pedodontics.

Periodontics

D9700x-D9701y, D9702x-D9703y. Clinical practice in periodontics
Professors Gottsegen and Langer, and staff.

Clinical experience in diagnosis, treatment planning, and all the phases of periodontal therapy. Exposure to a wide variety of surgical procedures, various occlusal concepts, simple orthodontic procedures, temporary stabilization methods, and grounding in patient management. Emphasis on motivating the patient to practice oral hygiene. *Five clinic sessions a week in the first year and six a week in the second year.*

D9720x-D9721y, D9722x-D9723y. Treatment planning in periodontics
Professors Johnson, Wasserman, Sieger, and Baron.
D9724x. Minor tooth movement in periodontics
Professors Geiger, Hirschfeld, and Lasoff.

The selection of cases and technic for performing minor tooth movements. *One hour of lecture a week.*

D9725x-D9726y. Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics
Professors Tannenbaum and Johnson

One one-and-one-half hour lecture and one seminar a week for one year.

D9727x-D9728y. Histology and histopathology of periodontal structures
Professor Moskow.

Study of microscopic aspects of periodontium in health and disease as they relate to clinical findings. Lectures and laboratory including microprojection. *Two hours a week for one year.*

D9729x-D9730y. Restorative dentistry related to periodontics
Professors Lucca, Bruno, Grayson, Goldin, Scarola, Herlands, Hindels, Jutkowitz, and Widrow.

Restorative dentistry significant to periodontal problems. *One one-hour lecture a week for one year.*

D9731y. Practice management in periodontics
Professor Hirschfeld.

One one-hour lecture a week for eleven weeks.

Periodontics Seminars

The following seminars provide the didactic core of periodontics and are organized as several concurrent and consecutive series devoted to different subject areas. This series is a review of the basic and significant periodontic literature having to do with the biology of the periodontal structures, periodontal disease, and periodontal treatment; it concerns itself with the role of periodontics and the surrounding world.

D9704x-D9705y. Seminars in periodontics
Professors Gottsegen, Abbatiello, Cantor, and Winter.

A comprehensive and intimate familiarity with the literature is developed by the extensive seminar program. In addition the ability to read critically, to evaluate, and to present personal case material is engendered. *One two-hour seminar a week for one year.*

D9708x-D9709y, D9710x-D9711y. Seminars in periodontics: periodontal therapy

Professors Stein and Winter.

Review of the literature in periodontal therapy. Students become familiar with the historical development of periodontal therapeutic techniques by exploring the literature, reading the classic articles and critically analyzing the pertinent research. *One-and-one-half hours a week for one year.*

D9713y, D9714x-D9715y. Periodontal surgical conference

Professors Gottsegen, Abbatiello, Stein, and staff.

Seminars in periodontal surgical problems; literature review, critical analysis, and student case presentation. *One one-and-one-half hour seminar a week throughout the academic year.*

D9716x-D9717y. Seminars in periodontics: Journal club
Professor Wasserman.

A seminar series based on selected articles from current journals. Critical analysis of the assigned paper requires search and review of pertinent literature. The objective of this course is to develop habits of critical reading of the scientific literature. *One-and-one-half hours a week for one year.*

D9718x-D9719y. Seminars in periodontics: sociocultural and economic aspects of periodontics

Professor Gottsegen and staff.

A series of seminars and discussions in which the historical and ethical background of medicine and dentistry becomes the framework for exploring current socioeconomic issues related to the health professions. This course is based on the belief that the increasing social responsibility demanded of leaders of the health professions requires specialists having broad cultural understanding and strong ethical values as well as advanced technical skill and scientific knowledge. *One-and-one-half hours a week for one year.*

Fellowship and Postdoctoral Programs in Basic Sciences

In recognition of the need for advanced education in the basic sciences and to qualify graduates in dentistry as teachers and investigators, fellowships are offered for study and research in anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. The specific objectives of the program are to furnish more complete preparation for careers in dental education and to offer training in investigation so that research in important unsolved problems indigenous to dental science will be extended. Students may apply also to the United States Public Health Service for financial aid.

The formal instruction is elected from courses offered in the Graduate School of Arts and Sciences, the School of Dental and Oral Surgery, the College of Physicians and Surgeons, and the School of Public Health. Each fellow must formulate and carry out, under supervision, an original investigation. During the period of appointment, fellows are expected to remain in residence and devote their entire time to study and research. In order to maintain contact with clinical dentistry, the student may attend clinics in the School of Dental and Oral Surgery and will be given an opportunity to participate in undergraduate teaching.

Fellowship Application

To apply for a fellowship in the basic sciences for dentists, the applicant should obtain, from the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032, an application form which should be filled out and returned to the same address. Applicants should also arrange for each college or university they have attended to send two official transcripts of their records to the Postdoctoral Admissions Office. A personal interview with the applicant is required. The applicant must be accepted not only by the School of Dental and Oral Surgery but also by the chairman of the specific basic science department within which he or she wishes to study. Applications may be submitted at any time. Appointments are made as vacancies occur.

Admission to the Graduate School of Arts and Sciences

Upon acceptance to a postdoctoral program, the applicant must apply for admission as a regular graduate student in the Graduate School of Arts and Sciences of Columbia University. The admission procedure, and the procedure and dates for registration, including payment of fees, are given in the bulletin of the Graduate School of Arts and Sciences, a copy of which may be secured by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

Postdoctoral Trainees in Comparative Biology of Calcification

Two qualified applicants may be accepted each year for training under the provisions of a grant in comparative biology of calcification. Such training may or may not lead to the Ph.D. degree, depending on the specific needs and desires of the applicant. Further information may be obtained by writing to Professor Melvin L. Moss, School of Dental and Oral Surgery, who currently holds the grant.



The Dental Hygiene Programs

A Career in Dental Hygiene

Admission Procedure

The Baccalaureate Programs

Program A

Program B

The Graduate Program

A Career in Dental Hygiene

As the need for preventive dental services increases, the spotlight focuses on the dental hygienist. The present and future demands, both national and international, far exceed the number of dental hygienists now available and in training.

The programs in dental hygiene offer excellent preparation for taking advantage of the countless opportunities open to registered dental hygienists in different fields. In private practice the dental hygienist, as a member of the dental health team, provides preventive clinical services and education under the supervision of the dentist.

In compliance with school policies and under the direction of the supervising dentist and the school administrator, the dental hygienist provides clinical services and health education in a program designed to improve and maintain the dental health of school children.

In public health positions the dental hygienist aids in the maintenance of the total health of the community by augmenting the services of the public health dentist in areas of prevention, education, and care.

In industry the dental hygienist provides preventive and health educational services for the beneficiaries of the industrial health programs.

In hospitals, as a member of the total health team, the dental hygienist provides maintenance and preventive services to assist the patient in his attainment of maximum health.

In research, under the supervision of the dentist, the physician, and the basic scientist, the dental hygienist participates in areas of basic and applied research.

The Peace Corps, missionary service, American industries abroad, and dental hygiene schools in Europe all provide openings for young professionals with a desire to expand their horizons and dentistry and dental health.

In whatever field dental hygienists choose to serve, they hold positions of responsibility. They are in constant contact with the dentist, with public health personnel, and with governmental and voluntary health agencies.

Admission Procedure

Prospective applicants may use the application form attached to this bulletin or write to the Division of Dental Hygiene. The completed form should be returned with the application fee to the Division of Dental Hygiene, with a check or money order for \$20 made payable to Columbia University. This fee is not returned and is not credited toward tuition. Applicants should also ask each of the colleges and universities they have attended to send official transcripts of their academic records directly to the Division of Dental Hygiene, School of Dental and Oral surgery, 630 West 168th Street, New York, N.Y. 10032. Two letters of recommendation from former instructors also must be submitted.

Candidates for the B.S. degree are admitted only in September. Candidates for the M.S. degree and students who are not candidates for a degree are admitted in July, September, or January.

Acceptance Fee

Within two weeks after applicants have been informed of their acceptance, they must notify the Director that they intend to become degree candidates. A check or money order for \$200, payable to Columbia University, must accompany the applicant's acceptance. If the applicant registers at the next enrollment, the amount of the acceptance fee will be deducted from the tuition for that term. If the applicant does not register, the acceptance fee will not be returned.

Admission to Individual Courses

Students who do not wish to become degree candidates may be granted permission to attend a course or courses to a maximum of twelve points, if they meet the standards of scholarship and attendance required of degree candidates.

Program A

Admission Requirements

1. Applicants must be over eighteen years of age and must have records of good health.
2. Applicants must submit signed evidence of medical and dental examinations taken within three months prior to entering date.
3. Applicants must have completed two years, or 60 semester points, of work in approved colleges or universities, including 6 points of English composition, 2 points of inorganic chemistry, 2 points of organic chemistry, 4 points of biology, 3 points of sociology, and 3 points of psychology.
4. Applicants must either possess a current Red Cross First Aid certificate or arrange to obtain one before enrolling in the autumn term of the senior year.
5. Applicants whose credentials are acceptable for admission will receive an appointment for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the Alumni in their respective localities.
6. It is suggested, but not required, that applicants take the Dental Hygiene Aptitude Test of the American Dental Hygienists' Association.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points: 65 points of required courses; the remaining points, including the English requirement as determined by the English Placement Test, may be selected from courses offered at the School of Dental and Oral Surgery or in other University divisions.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Junior Year: Autumn Term

3000X. Human anatomy **2 pts**
Fundamentals of gross anatomy, beginning with the embryo and continuing through the systems.

3033x. Biochemistry **2 pts**
Basic course dealing with the chemistry of biological substances and transformations in living organisms. The chemistry of carbohydrates, fats, proteins, nucleic acids, enzymes, vitamins, and hormones is integrated into general discussions of the biochemical processes of the tissues of the oral cavity.

3067x. Histology **2 pts**
Lectures and laboratory work on the animal cell; study of the soft tissues of the oral cavity; drawing from sections of teeth and surrounding tissues under the microscope.

D3084x. Human physiology**2 pt**

Normal function of the respiratory, cardiovascular, renal and gastrointestinal systems is studied in lectures, demonstrations, and clinical illustrations.

D3100x. Oral anatomy**2 pt**

A study of the gross anatomy, morphology, and physiology of the structures of the oral cavity. Emphasis on primary and permanent dentitions and on the masticatory system as a whole.

D3126x. Radiology**2 pt**

Elementary electricity, the theory and development of x-rays and x-ray apparatus, and the technique for taking and processing dental x-ray films. Lectures, demonstrations, and practice in operating x-ray equipment.

D3400x. Preventive oral health services, I (lecture)**2 pt**

Primary preventive services which the dental hygienist may render prior to the inception of oral disease or abnormality. Basic concepts and principles of primary prevention necessary to the conduct of primary preventive oral health services.

D3401x. Preventive oral health services, I (clinic)**2 pt**

Students spend a total of ten hours each week in a clinical setting working with lab partners and patients.

D3420x. Professionalism in dental hygiene, I**1 p**

Basic study of parliamentary procedure; professional association organization and membership. Monthly meetings of the Junior American Dental Hygienists' Association provide laboratory sessions for the practice of parliamentary procedure.

Junior Year: Spring Term

D3001y. Head and neck anatomy**2 pt**

Study of head and neck anatomy, utilizing specimens and illustrated lectures.

D3017y. Microbiology**3 p**

Classification and differentiation of microorganisms, with particular reference to those found in the oral cavity. Methods of sterilization. Fundamentals of immunity. Use of the microscope in the study of oral flora.

D3085y. Head and neck physiology**2 p**

The interaction of internal and external environments and their relation to the function of head and neck anatomy.

D3113y. Pharmacology**2 p**

Orientation to the study of pharmacology as it affects the clinical practice of dental hygiene and dentistry. The particular uses of drugs and antibiotics and the relative value of germicidal agents.

D3151y. Stomatology**2 p**

Those diseases which affect the teeth and those in which the teeth and their investing tissues may be factors in systemic disturbances. Students attend clinical pathology cases diagnosed and discussed at bimonthly conferences sponsored by the Faculty of Dental and Oral Surgery.

D3200y. Methods in oral health education**2 p**

Introduction to methods and materials used in teaching oral health to individuals and groups.

D3402y. Preventive oral health services, II (lecture)**2 p**

An introduction to secondary preventive services which the dental hygienist may render after the inception of oral disease or abnormality. Application of basic concepts necessary to the conduct of secondary preventive services.

D3403y. Preventive oral health services, II (clinic)**2 p**

Students spend ten hours each week in a clinical setting that provides preventive oral health services to the public.

D3421y. Professionalism in dental hygiene, II**1 pt**

In-depth study of parliamentary procedure. Students are required to attend all scheduled Junior American Dental Hygienists' Association functions.

Senior Year: Autumn Term

D3138x. Myofunctional therapy (lecture)**2 pts**

The etiology and symptomatology of oral habits that affect occlusion, mastication, deglutition, facial expression, and speech. Cephalometric roentgenography and photography, and their use in the study of the face, jaws, and cranium. Theory and practice in habit retraining, including interview, examination, data collection and interpretation, and therapy techniques.

D3163x. Periodontics

Discussion of normal periodontium, of etiology and classification of periodontal disease, and of the principles of periodontology. The basic sciences are correlated with the clinical aspects of periodontal disease. Emphasis on preventive measures that are within the scope and responsibility of the dental hygienist.

D3175x. Pain control**2 pts**

Lectures and clinical sessions on basic and current concepts in the administration of local anesthetics.

D3268x. Introduction to dental research**2 pts**

The philosophy, principles, and methods of empirical research as they relate to preventive oral health services provided to the public by the dental hygienist; particular emphasis on the behavioral sciences. Research planning, statistical techniques, and research procedure.

D3350x. Social dental hygiene, I**2 pts**

An ecological approach to community oral health. The role of the dental team in maintaining and improving the state of community health. Demographic, social, and cultural factors influencing communications within the community. Coordination of health care resources in the development of community health. Emphasis on oral health as a part of comprehensive health services.

D3404x. Preventive oral health services, III (lecture)**2 pts**

An introduction to oral health services concerned in recent state laws affecting dental practice and the dental hygienist.

D3405x. Preventive oral health services, III (lab)**1 pt**

Students spend three hours each week developing competency on the manikin, as a means of acquiring familiarity with dental services recently prescribed by state law.

D3406x. Preventive oral health services, III (clinic)**2 pts**

Students spend twelve hours each week in a clinical setting that provides preventive oral health services to the public.

D3422x. Professionalism in dental hygiene, III**1 pt**

Career rights and obligations, with consideration given to the individual, the community, and the association. Students are required to attend all assigned Junior American Dental Hygienists' Association functions.

D3546x. Oral health teaching: theory**2 pts**

Designed to increase the students' ability to select and utilize appropriate methods and materials in oral education for primary and secondary school programs. Students develop a graded oral health curriculum for elementary and secondary schools and prepare a unit of instruction for one specific grade level.

Senior Year: Spring Term

D3139y. Myofunctional therapy (clinic)**1 pt**

Students spend three hours each week in a clinical setting that provides myofunctional therapy for selected patients.

D3234y. Critique in current dental literature**2 pts**

Introduction to the critical examination of current dental literature; evaluation of scientific writing and research methodology will be related to the needs of the dental hygienist.

D3351y. Social dental hygiene, II**3 pts**

Students spend six hours each week in a clinical setting of their own choice, in which they initiate and follow through on simple research projects.

D3407y. Preventive oral health services, IV (lecture)**2 pts**

Correlation of basic sciences with the practice of professional oral hygiene.

D3408y. Preventive oral health services, IV (clinic)**2 pts**

Students spend twelve hours each week in a clinical setting that provides preventive oral health services under conditions of optimal efficiency.

D3423y. Professionalism in dental hygiene, IV**1 pt**

Legislation affecting oral health and the careers of dental hygienists. Attendance at all Junior American Dental Hygienists' Association functions is required.

D3547y. Oral health teaching: practice**2 pts**

Students spend three hours each week providing oral health material developed in *DH D3543—Oral health teaching: theory*.

Electives.**6 pts**

Chosen with the approval of the adviser.

Elective Courses Offered at the School of Dental and Oral Surgery: Programs A and B

D3187x or y. Dental specialties (lecture)**2 or 4 pts**

Study of the history and ethics; methods, materials, and armamentarium in each of the dental specialties.

D3188x or y. Dental specialties (clinic)**1 or 2 pts**

Student will rotate through each clinical specialty, demonstrating proficiency in those dental hygiene services indigenous to the specialty.

D3190x or y, D3191x or y. Independent study**1, 2, or 3 pts each term**

Registration only by permission of instructor under whose guidance work will be undertaken.

Proposals must have prior approval of the faculty member. Students studying for one point must plan to spend three hours weekly on the proposal; two points will require six hours of study; three points will require nine hours of study per week.

D3352x or y, D3353x or y. Hospital administration**3 pts each term**

Principles and procedures of hospital organization and administration. The role of the dental hygienist and dental personnel in the hospital dental clinic. Field work in selected hospitals eight hours weekly.

D3546x. Oral health teaching: theory**2 pt**

Designed to increase the students' ability to select and utilize appropriate methods and materials in oral health education for primary and secondary school programs. Students develop a graded oral health curriculum for elementary and secondary schools and prepare a unit of instruction for one specific grade level.

D3547y. Oral health teaching: practice**2 pt**

Students spend three hours each week providing oral health material developed in *D3543—Oral health teaching: theory*.

D3550x-D3551y. Team**4 pts each term**

For Program B students only.

Study of the current status of team concepts and transitional services for dental hygiene practice. Seven hours study and practice weekly.

D3300z. Field experiences in public health**6 pt**

Six-week participation under supervision in a selected local or state health program. A written report is required.

Program B

Admission Requirements

All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex.

1. Applicants must be over eighteen years of age and have records of good health.
2. Applicants must admit signed evidence of medical and dental examinations taken within three months prior to entrance date.
3. Applicants must have completed two years of dental hygiene education with the average grade of B or better in colleges or universities approved by Columbia University.
4. Applicants must possess a current Red Cross First Aid certificate or arrange to obtain one before enrolling in the autumn term of the senior year.
5. Applicants whose credentials are acceptable for admission will receive an appointment for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the Alumni in their respective localities.
6. Applicants must submit National Board scores and clinical boards scores.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points, including the English requirement as determined by the score on the English Placement Examination. At least 35 of the required 70 points must be taken at the School of Dental and Oral Surgery. The remaining 35 points in a chosen area of concentration may be selected from courses offered at the School of Dental and Oral Surgery or in other University divisions.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Junior Year: Autumn Term

D3420x. Professionalism in dental hygiene **1 pt**
Stated under Program A.

D3580x. Advanced preventive oral health services, I (lecture) **2 pts**
Analysis and evaluation of the basic concepts and principles of traditional preventive oral health services.

D3581x. Advanced preventive oral health services, I (clinic) **1, 2, or 3 pts**
Students spend a total of three, six, or nine hours each week in a clinical setting.

An Introductory English course **3 pts**
Determined by the student's score on the Placement Test. See the bulletin of the School of General Studies.

Anthropology V1001x or y. Introduction to the study of man 3 pts
For complete entry, see the bulletin of the School of General Studies.

Fine Arts F1001x or y. Introduction to the arts 3 pts
For complete entry, see the bulletin of the School of General Studies.

Electives. 4 or 5 pts
Chosen from courses in the student's selected area of concentration, and with the approval of the adviser.

Junior Year: Spring Term

D3138y. Myofunctional therapy (lecture) 2 pts
Stated under Program A, senior year, autumn term.

D3421y. Professionalism in dental hygiene, II 1 pt
Stated under Program A.

D3582y. Advanced preventive oral health services, II (lecture) 2 pts
Analysis and evaluation of basic concepts and principles of transitional and advanced functions of dental hygiene.

D3583y. Advanced preventive oral health services, II (clinic) 1, 2, or 3 pts
Student spends three, six, or nine hours weekly in clinical setting.

An Introductory English course 3 pts
Determined by the student's score on the Placement Test. See the bulletin of the School of General Studies.

Electives. 7 or 8 pts
Chosen from courses in the student's selected area of concentration, and with the approval of the adviser.

Senior Year: Autumn Term

D3139x. Myofunctional therapy (clinic) 1 pt
Stated under Program A, senior year, spring term.

D3422x. Professionalism in dental hygiene, III 1 pt
Stated under Program A.

D3540x. Principles of teaching preventive oral health services (lecture) 3 pts
Examines the underlying philosophy and changing methodology in teaching oral hygiene. Attention given to the nature of learning, to human growth and personality, and to group dynamics.

D3544x. Dental hygiene teaching: theory 3 pts
A study of the current principles and methodology utilized in developing and designing a course and subsequent units of instruction in dental hygiene. Emphasis on instructional objectives, teaching methods, and evaluation procedures of significance to dental hygiene classroom instruction.

Electives. 7 or 10 pts
Chosen from courses in the student's selected area of concentration, and with the approval of the advisor.

Senior Year: Spring Term

D3423y. Professionalism in dental hygiene, IV 1 pt
Stated under Program A.

3541y. Principles of teaching preventive oral health services **2 pts**
 Students spend six hours each week teaching in a clinical setting.

3545y. Dental hygiene teaching: practice **4 pts**
 Students spend four hours per week teaching, observing and evaluating the course material prepared in 3544x.

Electives. **9 or 10 pts**
 Chosen from courses in the students selected area of concentration, and with the approval of the adviser.

For a listing of elective courses offered at the School of Dental and Oral Surgery, consult the list of the course listings under *Program A*, above.

Areas of Concentrated Study

Dental Hygiene Education

Preparation for first-level clinical teaching in dental hygiene programs. This concentration provides basic understanding of educational philosophy and psychology, teaching methods and materials, and tests and measurements. More than forty courses are available in different departments of Teachers College, Columbia University.

Social Science

Preparation for teaching and research in a dental hygiene program. Students acquire a basic understanding of sociology and psychology as well as elementary skills in research methods. Increasing emphasis on social research in health services has created a new field of interest for cooperative effort between behavioral scientists and health workers; this makes it possible for a hygienist with a basic understanding of dental theory to become a useful assistant in social research as it relates to dental health. Courses for this concentration are given in Teachers College, the School of General Studies, and the School of Dental and Oral Surgery.

Basic Science

Preparation for teaching primary and secondary preventive clinical services. Intensive study of the basic sciences prepares students for teaching student dental hygienists to correlate their basic science knowledge with their clinical practice. Courses are offered in the School of General Studies.

Public Health

Provide students with greater understanding of the role and function of dental hygienists in public health agencies and ways in which they work with health and social agencies in the community. Students are fortunate to have a large number of extramural public health, hospital, medical, and prepayment facilities and organizations in and around New York City for field experience. Courses are given at Teachers College, the School of General Studies, and the School of Public Health.

Speech

Preparation for teaching in a dental hygiene program or for transfer to graduate study in speech pathology. Students become familiar with major speech disorders related to dentistry and with the methods of preventing oral and facial defects. Courses are offered at Teachers College, the School of General Studies, and the School of Dental and Oral Surgery.

Dental Health Teacher Certification

Preparation for dental health teaching in public school systems. Requirements for permanent dental health certification in New York State are satisfied. Courses are offered at Teachers College and at the School of Dental and Oral Surgery.

Nutrition

Preparation for the teaching of nutrition at different levels. Attention is given to the development of nutritional programs in various communities, both in this country and abroad. Courses in sciences and related fields are offered at Teachers College and in the School of General Studies.

Liberal Arts

Students who do not wish to concentrate in any of the areas listed above may supplement their dental hygiene courses with liberal arts courses selected according to their background and individual needs. These courses may be taken in the School of General Studies.

Pre-Dental Education

Students interested in continuing to dental school should be prepared to fulfill certain course requirements during the summer prior to entrance. After entering the program, the student must follow a rigid course of study prescribed for entrance to most dental schools.

The Graduate Program

The Master of Science degree program in dental hygiene was established in 1952 to fill the demand for graduate education in the field of dental hygiene. This program is designed to prepare candidates for positions in one of the following: dental hygiene education and program administration, community and public health dental hygiene, dental health teaching, or educational and clinical research.

Admission Requirements

1. A bachelor's degree approved by Columbia University.
2. A license to practice dental hygiene or dentistry.
3. National Board scores and clinical board scores.
4. Signed recent medical and dental examination as evidence of good health.

The admission of students depends primarily upon their academic preparation and capabilities, but it also rests upon judgments of their character and health. All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex.

Degree Requirements

1. Completion of 18 points offered in the School of Dental and Oral Surgery.
2. Completion of 14 elective points taken in the School of Dental and Oral Surgery or other divisions of the University.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors as may be necessary.

6001x or y. Teaching preventive oral health services; Instruction and evaluation **4, 5, or 6 pts**

Applied study of clinical dental hygiene education utilizing the concepts inherent in a basic teaching model: instructional objectives, entering behavior, learning experiences, and evaluation procedures. Emphasis is placed on creating and evaluating clinical learning experiences for students in a preclinical course of study in a dental hygiene curriculum leading to a baccalaureate degree.

6002x or y. Administration **2 or 3 pts**

Broad orientation to administration problems unique to schools for dental hygienists. Students gain practical experience through field visits to nearby dental hygiene schools and do original research in one area of administration. *Weekly 2-hour seminar, field work, and a written report on the administration field visit.*

6003x or y. Curriculum **2 or 3 pts**

Major curriculum issues in higher education; principles and practices in curriculum organization and development; processes and problems of improving instruction. Special emphasis on dental hygiene curriculum development and evaluation. *Weekly 2-hour seminar, field work, and a written report on a curriculum problem.*

D6004x or y. Methods of research, I

Introduction to the philosophy, principles, and methods of scientific inquiry; topics include research planning, techniques of making observations, and analyzing and presenting data. Students have the opportunity to design research projects in clinical, social, or educational settings.

D6005x or y. Methods of research, II

Prerequisite: *DH D6004*.

Under the direction of a faculty member, students plan and execute a modest research project. Results of the investigation are presented in a thesis completed one month before the end of the term.

D6006x-D6007y. Oral diagnosis

Prerequisite: the permission of the chairman of the Department of Stomatology.

A comprehensive description of diseases of the mouth, jawbones, and related structures. *Weekly 2-hour seminar, research paper, and bimonthly clinical pathology conferences.*

D6008x or y. Scientific writing and reporting

A review of current literature in dentistry and related health fields; development of techniques for preparation of abstracts, reviews, and bibliographies on current issues. Editing, editorial styles, evaluation, and graphic interpretation. *Weekly 2-hour seminar, related reading and writing assignments.*

D6009x-D6010y or D6009y-D6010x. Professional laboratory experiences in dental hygiene education

Internship experience in developing and improving skills in designing, implementing, and evaluating educational experiences in dental hygiene education. Identification of the professional responsibilities of dental hygiene faculty in a democratic philosophy of education.

D6011x or y. Advanced periodontics (lecture)

Prerequisite: the permission of the department chairman.

Comprehensive study of periodontal disease. Analysis of the science and techniques of periodontics. Clinical experience in scaling and root planing.

D6012x or y. Advanced periodontics (clinic)

Clinical experience in scaling and root planing.

D6013x-D6014y or D6013y-6014x. Basic science foundation for dental hygiene practice

Structured observation and student reporting of audited basic science courses provides discussion of the need for and value of the study of basic sciences in the performance of quality dental hygiene service. Under the supervision of their respective basic science instructors, students lead class discussions on the basic sciences and their implications for professional dental hygiene practice.

D6015x. Oral physiology

Prerequisite: the permission of the departmental chairman.

A review of the physiological principles underlying certain oral functions, with special emphasis on sensory, motor, and secretory activity.

D6016z. Core course in administration, curriculum, and teaching

Offered only during six-week summer session.

Seminar discussions devoted to the organization and administration of dental hygiene programs curriculum planning, and teaching methodology. Particular emphasis to issues and problems of current importance. *18 hours of seminar each week.*

D6017x or y. Externship in dental hygiene education

Prerequisite: *DH D6016*.

Supervised administrative and teaching experiences in dental hygiene schools which cooperate with the dental hygiene program at the School of Dental and Oral Surgery. A written report is required. *Full time during spring term.*

D6018x-D6019y or D6018y-D6019x. Myofunctional

Independent graduate study designed to stimulate investigation into the etiology, symptomatology, and treatment of oral habits that may or may not affect occlusion, mastication, deglutition, facial expression, and speech. Each student selects an area of therapy according to his specific interest, and pursues a research course of inquiry.

6020x or y. Team services for the dental hygienist 5 pts
ensive study of the current status of team concepts and services for dental hygiene practice. Lectures
ish background information; and the necessary laboratory experience is provided to develop
iciency in the oral health care delivery system. An independent research paper is required.

6021x or y. Independent Study 1, 2, or 3 pts each term
egistration only by permission of instructor under whose guidance work will be undertaken.
oposals must have prior approval of the faculty member. Students studying for one point must plan to
end three hours weekly on the proposal; two points will require six hours of study; three points will re-
ire nine hours of study per week.

Registration, Expenses, and Financial Aid

Registration

Auditing Courses

Regulations

Fees

Estimated Expenses

Financial Aid

Honors

Living Arrangements

Student Organizations

License to Practice

Registration, Expenses, and Financial Aid

Registration

Before students may attend classes they must register in person during the registration period (see the Academic Calendar). Registration consists of filling out forms required for University records and payment of fees. Late registration requires the approval of the Dean of the school and payment of a late fee (see under the listing of fees, below).

All students will be asked to give Social Security numbers when registering in the University. Those who do not have a number should obtain one from their local Social Security office well in advance of registration.

Auditing Courses

Certificate and degree candidates in good standing who are enrolled for a full-time program in the current term may audit one or two courses (except during the summer term) in any division of the University (excluding Barnard College and Teachers College) without charge by filing a formal application in the Registrar's Office (Black Building, Room 138) during the change-of-program period. Applications require (a) the certification of the Registrar that the student is eligible to audit and (b) the approval of the dean of the school in which the courses are offered.

For obvious reasons elementary language courses, laboratory courses, studio courses and applied music courses, and seminars are not open to auditors; other courses may be closed because of space limitations. In no case will an audited course appear on a student's record, nor is it possible to turn an audited course into a credit course by paying the fee after the fact. Courses previously taken for credit may not be audited.

Regulations

According to University regulations, each person whose registration has been completed will be considered a student of the University during the term for which he or she is registered unless the student's connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which he or she is first registered.

The privileges of the University are not available to any student until he or she has completed registration. Since, under the University statutes, payment of fees is part of registration, no student's registration is complete until his or her fees have been paid. A student who is not officially registered for a University course may not attend the stated period unless he or she obtains written consent of the appropriate dean or director.

The University reserves the right to withhold the privilege of registration or any other University privilege from any person with unpaid indebtedness to the University.

Attendance and Length of Residence

A student in good standing may, for a valid reason, be granted a leave of absence by the dean or director of the division of the University in which he or she is registered.

Students are held accountable for absences incurred owing to late registration.

No degree will be granted to a D.D.S. candidate who has not registered for and attended

School of Dental and Oral Surgery courses of instruction equivalent to at least four academic years of full-time work. No advanced standing is granted.

No Dental Hygiene bachelor's degree will be granted to a student who has not registered for and attended Columbia University courses of instruction equivalent to two academic years of full-time work.

Unexcused absences in Dental Hygiene, exceeding the credit of the course (i.e., a 3-point course allows three hours of unexcused absence) will result in a failing grade for the term.

Religious Holidays

It is the policy of the University to respect its members' observance of their major religious holidays. Officers of administration and of instruction responsible for the scheduling of required academic activities or essential services are expected to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the academic calendar. Where scheduling conflicts prove unavoidable, no student will be penalized for absence due to religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and the instructor involved, students and instructors should consult the appropriate dean or director. If an additional appeal is needed, it may be taken to the Provost.

Some of the major holidays occurring on weekdays during the 1977-1978 academic year are:

Tuesday-Wednesday, September 13-14, 1977	Rosh Hashanah
Thursday, September 22, 1977	Yom Kippur
Tuesday-Wednesday, September 27-28, 1977	First days of Succoth
Tuesday-Wednesday, October 4-5, 1977	Concluding days of Succoth
Friday, March 24, 1978	Good Friday
Friday, April 28, 1978	Concluding days of Pesach

Grading System and Requirements for Promotion and Graduation

D.D.S. Program

The following grading system is used: A, excellent; B, good; C, fair; F, failure; YC, year course; P, pass.

A student may be admitted to the second, third, or fourth year of the dental curriculum only upon recommendation of the officers of instruction under whom he or she has studied during the preceding year.

The School reserves the right to refuse readmission or promotion to any student who is believed for any reason to be unsuited to the conditions of study in the School.

Students are classified for readmission or promotion under the following categories: (1) recommended for advancement; (2) recommended for readmission to the same class; (3) recommended neither for advancement nor for readmission to the same class.

The degree of Doctor of Dental Surgery will be awarded upon completion of the prescribed curriculum.

The Postdoctoral Certificate Programs

The following grading system is used: A, excellent; B, good; C, fair; F, failure; YC, year course; P, pass.

To be awarded the certificate of training, a candidate must fulfill the following requirements to the satisfaction of the Postdoctoral Committee. The candidate must:

- 1) complete the prescribed courses and any required thesis; students wishing to be exempted from any of the prescribed courses may request a placement examination in the discipline involved, and the time made available by such exemptions will be planned and supervised by the Program Director for productive utilization.
- 2) pass prescribed written, oral, or practical examinations at the end of the period of residence;
- 3) attend special courses, when assigned, at hospitals or institutions affiliated with Columbia University but separate from the Medical Center;
- 4) any postdoctoral student receiving marginal grades in more than one subject in any one academic year may be advanced or promoted only upon special action and recommendation of the Postgraduate Committee; and,
- 5) satisfy the Postdoctoral Committee that he or she has completed all the specified requirements both clinical and academic for the certificate of training.

Dental Hygiene Programs

The grading system is as follows: A, excellent; B, good; C, fair; D, minimum passing grade; F, failure.

Failure to obtain a passing grade is sufficient reason for asking a student to repeat the course or to resign.

The mark of ABS (authorized absence from an examination) is given by the instructor only with the approval of the Director. If the ABS is not removed by the end of the following term, it will automatically be changed to F.

The mark of INC (incomplete) is given only to a student who has satisfactorily met all but one of the requirements of a course but who has been compelled for reasons beyond control to postpone certain assigned papers or reports. If the INC is not removed by the end of the following term, it will automatically be changed to F.

The School reserves the right to refuse readmission or promotion to any student who is believed for any reason to be unsuited to the conditions of study in the School.

Academic Discipline

The following statement on student discipline is in the Statutes of the University: "The continuance of each student upon the rolls of the University, the receipt by him [or her] of academic credits, his graduation and the conferring of any degree or the granting of any certificate, shall be subject to the disciplinary powers of the University which shall be free to cancel his registration at any time on any grounds it deems advisable."

Honor Code

Academic and intellectual integrity are accepted principles in the dental profession. An Honor Code, created and administered by the student body, is the formal acknowledgment of this understanding at the School of Dental and Oral Surgery. Each dental student is expected to abide by it.

Conduct

All members of the University community, its visitors and guests, are governed by the Rules of University Conduct which apply to all demonstrations, including rallies and picketing, that take place on or at a University facility. It is the student's responsibility to be aware of all provisions, regulations, and procedures contained in the Rules. Copies are available in the Office of the University Senate, 406 Low Memorial Library.

Changes in Programs of Study (Dental Hygiene)

Once registered, a student may drop or add courses or change sections by filing a formal change-of-program application with the Registrar during the change-of-program period each term (see the Academic Calendar). All such changes must first be approved by the student's adviser before submission to the Registrar.

Students may drop courses *after* the change-of-program period by following the same procedure; however, for courses dropped after the last day for change of program in each term, no adjustment of tuition is made. *Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and results in a failing grade in the course.*

Fees

The following fees are prescribed for the D.D.S. program, for each of the postdoctoral programs and the dental hygiene programs. Fees are subject to change at any time at the discretion of the Trustees. Fees for partial programs are assessed by the Registrar as provided by the University statutes. Below are the fees for the 1976–1977 academic year.

For D.D.S. and postdoctoral candidates, the tuition, the student health fee and the health insurance premium are payable in advance and as part of registration.* (These students may choose to pay tuition in two installments, one-half of the tuition is payable at registration in September and the other half is payable in January.)

For dental hygiene candidates, tuition is payable each term in advance and as part of registration.* The health service fee is payable at registration each autumn and spring as indicated below. The annual hospital insurance premium is payable at registration in September.†

If these fees are paid after the last day of registration, they will not be reduced, and a late fee of \$10 will be imposed. Checks for tuition and fees should be made payable to Columbia University.

Tuition

Full-time D.D.S. and certificate students, per academic year:	\$4,110.00
Full-time dental hygiene students	
Autumn and spring terms, per term	\$1,780.00
Summer session, M.S. program	833.00
Part-time dental hygiene students, for courses, per point	119.00

Health Service and Hospital Insurance Fees

Full-time D.D.S., dental hygiene, and certificate students per year (September 1 – August 31)	
Health Service Fee	\$ 200.00
Hospital Insurance Premium	114.00

The student health service fee contributes to the cost of operating the Student Health Service. The hospital insurance fee pays the annual premium of the Associated Hospital Service of New York. Participation in these programs is compulsory for all full-time students; students who already carry hospital insurance, however, will be charged the health service fee only. Part-time students are encouraged to participate in the combined health plan. Upon payment of additional fees, students can acquire hospital insurance coverage for their dependents and the latter are eligible to receive the benefits of the health service program. Students should

*However, the newly admitted degree or certificate candidate in the School of Dental and Oral Surgery is required by the School, upon acceptance, to submit an acceptance fee to reserve a place in the entering class. This amount is credited toward tuition when the student registers.

†Candidates for the M.S. degree who are admitted in January pay approximately one-half the annual hospital insurance premium at their first registration.

consult the Student Accounting Division, Black Building, Room 141 for further information on dependent coverage.

The Student Health Service, which holds daily office hours, is on the street level of Bard Haven Tower 1 (60 Haven Avenue).

All entering students are required to have a physical examination at the School of Dental and Oral Surgery Health Service.

Application Fees and Late Fees

Application for admission	\$20.00
For renewal of application for a degree or certificate (see below)	1.00
For late registration	10.00
For late application (or late renewal of application) for a degree or certificate	10.00

Fees for Repeated Courses

A student who is required to repeat the work for any one year must pay the full tuition and fees. Repeated courses are paid on a per point basis.

Withdrawal and Adjustment of Fees

Students in good academic standing who are not subject to discipline will always be given an honorable discharge if they wish to withdraw from the University. Students who decide to withdraw from the University must notify the Dean and the Registrar at once. Dental Hygiene students who are under twenty-one years of age, their parents or a guardian must first give consent in writing to the Director of the Division of Dental Hygiene.

If a student withdraws from the School, a partial return of the tuition may be authorized by the Registrar. Any adjustment of the tuition that the student has paid is reckoned from the date on which the Registrar receives the student's written notification. The student health and hospital fee, application fees, late fees, and special fees are not subject to rebate. Up to and including the second Saturday after the first date of classes tuition will be retained in the following amount:

Full-time study	\$50.00
Part-time study	25.00

After the second Saturday after the first day of classes in the term, the above amount is retained, plus an additional percentage of the remaining tuition (as indicated in the adjustment schedule), for each week, or part of a week, of the term up to the date on which the student's written notice of withdrawal is received by the Registrar.

Adjustment Schedule

	<i>Minimum Tuition Retained</i>	<i>Percentage of Remaining Tuition Retained</i>
Second Saturday after first day of classes	\$25 or \$50	0
Following week	25 or 50	10
Second following week	25 or 50	20
Third following week	25 or 50	30
Fourth following week	25 or 50	45
Fifth following week	25 or 50	60
Sixth following week	25 or 50	75
Seventh following week	25 or 50	90
Eighth following week	25 or 50	100 (no adjustment)

Application or Renewal of Application for Degrees or Certificates

Degrees and Certificates are awarded three times a year—in October, January, and May. A candidate for any Columbia degree or certificate must file an application with the Registrar, Room 138, Black Building, by the date specified in the Academic Calendar. After the dates specified in the Academic Calendar and until the expiration of the *late* filing period for each conferral date a late fee of \$10 will be charged. Applications received *after* the late filing period will automatically be applied to the next conferral date.

If the student fails to earn the degree by the conferral date for which he or she has made application, the student may renew the application by paying a renewal fee of \$1. A \$10 late fee will be charged for late filing of renewals of application according to the same schedule as for original applications.

Requests for Transcripts

Transcripts may be requested by writing to the Office of the Registrar, 630 West 168th Street, New York, N.Y. 10032. *Official* transcripts must be sent by the University directly to an official address such as another university, a college, a business firm, or a government agency. However, a student may request that an unofficial transcript (stamped "Student Copy") be sent to him or her. There is a charge of \$2 for each transcript requested except those which are sent between offices of Columbia University. Checks accompanying transcript requests should be made payable to Columbia University.

Estimated Expenses

D.D.S. Program

Books. The approximate cost of books will be: in the first year, \$245; in the second year, \$350; in the third year, \$305; in the fourth year, \$145. Book lists are posted for each class during registration week. Books may be purchased from the Medical Center Bookstore on the first floor of the College of Physicians and Surgeons. The store is maintained expressly for the convenience of the students and staff of the Medical Center schools and hospitals.

Instruments and Supplies. The completion of a new physical facility makes necessary a revision of the school instrument policy beginning in September of 1977.

Each student must rent from the University a package of instruments necessary for preclinical and clinical dental instruction. Additional expendable materials and dental handpieces must be purchased by the student. The estimated cost of purchased and rented materials for students entering in September of 1977 will be approximately \$2,000 over the four year period. In addition, microscopes are available for rental for those students not owning them during the first year. The microscope rental fee is \$40 a year.

Arrangements have been made to spread the \$2,000 fee over the four year period. First-, second-, and third-year students will pay \$500 for the 1977–1978 year (purchase and rental). Fourth-year students remain under the total purchase plan and will make their final payment of approximately \$1,475 in September of 1977.

Rented equipment is assigned to students and must be returned. A charge will be made for loss, breakage, and abnormal wear. Variations in this estimated cost may be necessary because of price fluctuations or new developments. These figures are presented as a guide for student planning. Students are asked not to present checks made in advance and based upon these figures. Details will be sent immediately prior to registration.

Microscopes. During the first and second years microscopes are provided by the School for a rental of \$40 a year. If a student prefers to provide his own microscope, he must have it ap-

proved by the Department of Anatomy. It is recommended that the microscope be of standard make equipped with: (a) quadruple nose piece; (b) Abbe or variable focus condenser; (c) 4x, 10x, 43x objectives; (d) 96x oil immersion lens; (e) 10x wide field eye piece; (f) mechanical stage; (g) attached lamp; (h) carrying case.

The cost of a new microscope ranges from \$500 to \$750, and of a reconditioned microscope from \$200 to \$500. Arrangements for approval and for purchase or rental should be made before registration for the opening term.

Lockers. Each entering student is assigned a locker; he must use a combination lock as prescribed by the School.

Postdoctoral Certificate Programs

Since the prices of books and instruments may fluctuate and since it may be necessary for the School to make substitutions because of supply shortages, the figures given below for instruments and books are only approximate.

<i>Program</i>	<i>Tuition (2 years)</i>	<i>Instruments</i>	<i>Books</i>
Endodontics	\$8,220	See note*	\$170
Orthodontics	8,220		220
Pedodontics (cerebral palsy)	8,220		135
Periodontics	8,220		190

IMPORTANT: According to Treasury decision 6291, under Section 162 of the 1954 Internal Revenue Code, income tax deductions are allowed in many instances for tuition and other educational expenses. Students are referred to the federal ruling on income tax deductions for teachers and other professional people seeking to maintain or improve skills in their employment.

Dental Hygiene Programs

In addition to the tuition and fees, approximate first-year costs are:

Room and Board	\$2,000-2,600
Books	300
Instruments and equipment	*
Uniforms and accessories	150

In addition to the tuition and fees given above, approximate second-year costs are:

Room and board	\$2,000-2,600
Books	100
Instruments and equipment	*
Uniforms and accessories	50

Financial Aid

Students may apply for financial aid through the Financial Aid Officer in the Dean's Office. Grants are awarded only in combination with loans; any student who can demonstrate need is eligible to apply. Application forms are issued by the Dean's Office.

Student loans are available on the basis of financial need to full-time Columbia degree candidates to partially cover normal educational and living expenses for the year in which the

*Instrument rental will be required for students enrolled for graduate certificates and for dental hygiene degrees. Dental handpieces and expendable supplies must be purchased by the student. A breakdown of purchase and rental responsibilities will be provided prior to registration.

loan is granted. The University reserves the right to assign the funds from which loans are granted. Students who are United States citizens and residents of states having loan plans are urged to apply to these sources. Federal Health Professions loan funds are also available. To insure an early decision, applications for all loans should be filed for the autumn term by May 1; for the spring term by December 1. Foreign students should be advised that there is limited funding in all programs.

The heavy schedule of the School makes it difficult for D.D.S. students to undertake outside part-time work during the academic year. If at all possible, other financial arrangements should be made.

Basic Educational Opportunity Grants (B.E.O.G.)

Undergraduate students enrolled for at least a half-time course of study who have not previously received a Bachelor's Degree are eligible to apply for a grant up to \$1,400 based upon financial need. Applications are available from Basic Grants; Department of Health, Education, and Welfare; Office of Education; Washington, D.C. 20202.

New York State Tuition Assistance Plan (T.A.P.)

Any student in the D.D.S. degree program or in the Division of Dental Hygiene who has been a legal resident of New York State for the preceding year is eligible for a New York State Tuition Assistance Plan (T.A.P.) award for each term in which he or she is registered as a full-time degree candidate. The amount of this award is based upon the net taxable balance of the student's income and the income of those responsible for his or her support, as reported on the New York State income tax return for the previous calendar year. Further information and application forms may be obtained from the New York State Higher Education Services Corporation, Tower Building, Empire State Plaza, Albany, New York 12223.

Columbia University Loans

Student loans are available to Columbia University degree candidates on the basis of financial need. These funds may be used for tuition, fees, books and supplies, and subsistence. Unusual or excessive personal expenses that fall outside the normal student budget may not be included. Student loans are not intended to cover the entire cost of attending the University but are meant, rather, to supplement a student's own resources.

Columbia University loans are open to full-time degree candidates in any division of the University. However, foreign students with "F" or "J" visas are required to provide a co-maker. A co-maker must be a citizen or permanent resident of the United States who has an income or salary within the United States and who is not an employee of the University.

Repayment of a Columbia University loan must begin when a student ceases to be registered as a full-time degree candidate at the University, and may be extended over a period of ten years, so long as the minimum monthly payment does not fall below \$30. Interest is at 3 percent.

Students who wish to apply for loans should first consult the Financial Aid Officer in the Dean's Office.

National Direct Student Loans—Health Professions Loans

These funds are provided through federal legislation. N.D.S.L. loans are provided for degree candidates in the Division of Dental Hygiene while Health Professions loans are for D.D.S. candidates.

Repayment may be postponed for one year following the date that a student ceases to be registered at Columbia and may be extended over a period of ten years, beginning with the date of first payment. Interest is at 3 percent.

State Loans

Legal residents of the State of New York who are degree candidates are eligible to apply for loans guaranteed by the New York Higher Education Assistance Corporation. Other states have similar loan programs. Further information and application forms may be obtained from the Financial Aid Officer.

Postgraduate Periodontics Student Loan Fund

The David Monahan Postgraduate Periodontics Student Loan Fund is used to help periodontic postgraduate students who are in financial need. No interest will be charged while the student is in the program, but will be applied upon graduation at a low rate. Loans are repaid within five years of leaving the program. For further information contact the director of the periodontics program.

Armed Forces Health Professions Scholarship Program

The Uniformed Services Health Professions Revitalization Act of 1972 (Public Law 92-426) established scholarships for students in the health services. These scholarships have been provided between the Army, Navy, and Air Force, and are awarded to students in medicine, podiatry, dentistry, veterinary medicine, optometry, podiatry, and clinical psychology at the Ph.D. level.

Basically, the program known as the Armed Forces Health Professions Scholarship Program is as follows: eligible students apply to one of the three branches of the Armed Forces of their choice. Students selected are commissioned as second lieutenants or ensigns in the inactive reserve. While in the program, the students receive a monthly stipend, except during an annual 45-day active duty tour, for which they are on full pay. The active duty tour is to be performed at a military hospital or medical center, and is to be arranged in order not to interrupt academic work. If required by the school, arrangements may be made to permit during the 45-day active duty on campus. In addition, the service pays all tuition, mandatory fees, and related academic expenses of the student. The student incurs an obligation of one year of active commissioned service for each year or fraction of a year of program participation. All participants incur a minimum tour of two years.

For further information concerning the Armed Forces Health Professions Scholarship Program, the student may write one of the following:

U.S. Army
Department of the Army
DASG-PTP
Washington, D.C. 20314

U.S. Navy
Bureau of Medicine and Surgery
Navy Department (Code 3174)
Washington, D.C. 20372

U.S. Air Force
HQ ATC/RSOS
Randolph Air Force Base, Texas 78148

Honors

D.D.S. Program

Alpha Omega Scholarship Award. A plaque presented to the graduating student (not necessarily an Alpha Omegan) with the highest scholastic average for the four years of dental studies. First awarded in 1949.

American Academy of Oral Medicine. A certificate and a subscription to the *Journal of Oral Medicine*, awarded to a fourth-year student for excellence in this field.

American Academy of Gold Foil Operators. Certificate awarded to a fourth-year student for excellence in gold foil technique.

American Academy of Dental Radiology. A certificate awarded to a fourth-year student for excellence in this field.

American Academy of Periodontology. A student award certificate and a one-year subscription to the journals published by the American Academy of Periodontology, awarded to an outstanding student in periodontics.

American Association of Oral Pathology. A certificate to the graduating student who has shown the most interest, accomplishment, and promise in the field of oral pathology.

American Association of Orthodontists. A certificate awarded to a student showing exceptional interest and special aptitude in orthodontics.

American College of Dentists, New York Section. An award of \$100 and a plaque or scroll. Presented to a third-year student who is a good all-around student, a member of the student section of the American Dental Association, and who exhibits leadership.

American Dental Society of Anesthesiology, Inc. An award certificate and a one-year subscription to *Anesthesia Progress*, awarded to a fourth-year student who has shown outstanding ability or interest in the field of pain control.

American Society of Dentistry for Children. A certificate, one year of membership in the society, and a one-year subscription to *The Journal of Dentistry for Children*, awarded to a fourth-year student.

Herbert J. Bartelstone Award in Pharmacology. An award given annually to a member of the graduating class of the College of Physicians and Surgeons and a member of the graduating class of the School of Dental and Oral Surgery who have demonstrated exceptional accomplishments in pharmacology.

William Bailey Dunning Award for Excellence in Periodontology. A medal awarded to a graduating student who is the most proficient in periodontology. First awarded in 1957.

Ella Marie Ewell. A medal awarded to the graduating student who is the most proficient in some subject of dentistry.

International College of Dentists, U.S.A. Section. A plaque presented to the graduating student who has shown the most professional growth and development during the year of dental study.

Italian Dental Society Award. An award of \$100 to a graduating student who has demonstrated outstanding scholarship.

Long Island Academy of Odontology. A certificate awarded to a student showing exceptional proficiency in preventive dentistry.

Arthur Merritt Award. A certificate and award of \$50 to the outstanding fourth-year student in periodontics.

Prize for Excellence in Operative Dentistry. A certificate awarded by the staff of the Section of Operative Dentistry to the graduating student who has shown the greatest proficiency in operative dentistry.

Certificate for Excellence in Pedodontics. A plaque awarded to a graduating student for excellence in pedodontics. Established by the Class of 1929.

Phi Omega Fraternity Award. A plaque presented by the Gamma Lambda Chapter to the graduating student who has displayed exemplary professional conduct.

Howe-Wiberg Medal. An award made by the Association of Dental Alumni to the graduating student who has shown the greatest proficiency in prosthetic dentistry.

Van Woert Award. A scholarship given to the senior dental student, at the beginning of the year, who has high scholastic attainment and personal character as well as need for financial assistance.

Women's Auxiliary to the 11th District Dental Society. An award of \$150 to a deserving fourth-year student who is a resident of the Borough of Queens.

Dental Hygiene Program

Clinical Proficiency Award. Awarded by the Dental Hygienists' Association of the City of New York to honor the student who demonstrates the greatest proficiency in the clinical practice of dental hygiene. A certificate and payment of dues to cover one year's membership in the American Dental Hygienists' Association and its component and constituent associations is provided annually.

Sigma Phi Alpha, Lambda Chapter. Sigma Phi Alpha is a National Honor Society established in schools of dental hygiene to recognize scholarship, service, and character among students. Membership is awarded to the top 10 percent of the graduating class, based on scholastic standing and leadership potential.

Dr. Albert H. Stevenson Medal. Awarded by the Dental Society of the State of New York to an honor student from each of the dental hygiene schools in the State. It commemorates the interest and work of Dr. Stevenson in the field of dental hygiene.

Dr. F. J. Swanson Medal. Awarded since 1920 by Dr. F. J. Swanson to the student who demonstrates excellence in theory and practice.

Living Arrangements

On the University Campuses

The University provides limited housing for undergraduate and graduate men and women who are regularly registered either for an approved program of full-time academic work or for work being done on a doctoral dissertation. The rates below are for the academic year 1976-1977.

Morningside Campus

Rates in the residence halls (Harmony, Hudson, John Jay, Johnson, McBain, Ruggles, and 70 Morningside Drive) for single and double rooms average \$1,100 per person for the autumn and spring terms. Meals are available in the John Jay or Johnson Hall dining room on weekdays when classes are in session. These may be paid for in cash or through subscription to a board plan. Inquiries from men students should be directed as early as possible to the Residence Halls Office, 125 Livingston Hall, Columbia University, New York, N.Y. 10027. Inquiries from women students should be directed as early as possible to Johnson Hall, 47 West 116th Street, New York, N.Y. 10027.

Medical Center

Eli B. White Memorial Residence Hall, located at 419 West 114th Street, is a residence of the School of Nursing, but rooms are also available to men and women (primarily undergraduates) registered in other full-time programs at the Medical Center. Each student occupies a single room. Assignment of rooms is for the term. The room charge for the academic year, September through May, is \$960; half of which is payable each term at registration. There is an optional board plan. Apply directly to the Director of Student Affairs, School of Nursing, Columbia University, 179 Fort Washington Avenue, New York, N.Y. 10032.

Bard Hall is the residence for students in the College of Physicians and Surgeons, but rooms are also available to unmarried students registered in other full-time programs. Several floors are reserved for women students. The facilities of the Hall include lounges, a dining room and grill, and a swimming pool and gymnasium. The rate for a room is about \$135 per month, including breakfast on weekdays on which the cafeteria is open. Breakfast is reserved on holidays or during the regular academic vacation periods of the College of Physicians and Surgeons. A full-board plan for September to June is available. Applications should be submitted as early as possible. Vacancies are filled as they occur throughout the year. Very few rooms become available in September though there are openings in October and November. Entering students are therefore advised that a room assignment would most often not coincide with the beginning of the autumn term. Applications and further information will be furnished on request by the Bard Hall Office, 50 Haven Avenue, New York, N.Y. 10032.

Housing for students is available at Bard Haven, 100 Haven Avenue, New York, N.Y. 10032, near the Medical Center. Monthly rates for air-conditioned, unfurnished apartments are about \$280 and up. Twenty-four hour doorman service is provided. Students are urged to apply for an apartment as soon as they apply for admission to the program, as apartments are limited. Requests for further information and application forms should be directed to the Office of University Housing, 400 West 119th Street, New York, N.Y. 10027.

Off Campus

Students under twenty-one years of age who wish to live off campus must have the written consent of parents or guardian sent to the Office of the Director.

Students who wish to live in furnished rooms or apartments off campus may consult the Columbia University Registry of Off-Campus Accommodations, 110 Livingston Hall, New York, N.Y. 10027, for information.

International House, a privately owned student residence near the Morningside campus, has accommodations for about five hundred graduate students, both foreign and American. Rates include a continental breakfast, linen and maid service, and membership and program fees. A cafeteria, recreational facilities, and a varied program are available to members. To be eligible for admission, a student must be at least twenty-one years old and must be registered for at least 12 points or for a program of full-time research. Inquiries should be addressed to the Committee on Admissions, International House, 500 Riverside Drive, New York, N.Y. 10027.

Student Organizations and Activities

Student Council

In accordance with the plan for all schools in the University, the students are organized under the Student Government Association. Through this organization the students have representation on the Columbia University Student Council, and are eligible for participation in the many activities at the Medical Center and on the Morningside campus.

Omicron Kappa Upsilon

Omicron Epsilon chapter of Omicron Kappa Upsilon, national honorary fraternity, was chartered in the School of Dental and Oral Surgery in 1934. The purpose of the fraternity is to recognize and honor a maximum of 12 percent of the members of the graduating D.D.S. class on the basis of scholarship, character, and potential for future professional growth and attainments.

The William Jarvie Society

The William Jarvie Society for Dental Research is a nonsecret, dental honor society, membership in which is based on scholarship and interest in dental research, and for which second, third, and fourth-year D.D.S. students are eligible. The society was organized in the School of Dental and Oral Surgery in 1920 and named after Dr. William Jarvie because of his wide interest in the promotion of dental research. The society aims to promote the spirit of research among the students.

The Student Dental Association

The Student Dental Association of Columbia University was established in 1960 to provide a professional and social forum in which D.D.S. candidates would participate. The general program of this organization is patterned after the program of local dental societies, in which the graduate dentist contributes to the organized dental profession. Undergraduate dental students are exposed to the democratic process of organization function, policy development, and programming as they meet their responsibilities for supporting the program of their association.

Junior American Dental Hygienists' Association

All students in the Division of Dental Hygiene belong to this association, which meets monthly. The purpose is to foster an interest in the work of the American Dental Hygienists' Association and to prepare students for admission after graduation to full and active membership in the professional organizations.

Foreign Students

The staff of the Office of the Foreign Student Adviser on the Morningside Campus provides advice and counseling to foreign students on such matters as housing, personal and financial

problems, and regulations of the United States Immigration and Naturalization Service (visa extensions of stay, work permission, temporary departure from the United States, transfer from Columbia to another school, termination of study). Information about the various foreign student clubs at Columbia and about opportunities to attend conferences, travel in the United States, and participation in community and cultural activities may be obtained from this office. Maps of New York City and discount tickets to concerts and plays are available.

The staff of the Office of Foreign Student Admissions provides information and counseling on University admission, advanced standing, English proficiency examinations, and academic placement.

Postdoctoral Programs

Student organizations in the postdoctoral disciplines are open to membership. The Program Director should be contacted for additional information.

License to Practice

Dentistry

Successful performances in Parts I and II of the examinations given by the Council of the National Board of Dental Examiners are preliminary requirements for licensure in most states in the United States, including New York.

Those seeking licensure solely in New York State may take the final or clinical examination offered by the Board of Dental Examiners of the State of New York. Successful completion of these examinations entitles the applicant to licensure, assuming the prerequisites of good moral character, citizenship, or declaration of intention of becoming a citizen, are fulfilled. For additional information request a copy of Handbook 10, *Professional Education*, from the Division of Professional Licensing Services, New York State Department of Education, Albany, N.Y. 12201.

It is advisable, however, that candidates for licensure take the clinical examinations offered by the North East Regional Board of Dental Examiners, the content and format of which are identical to those of New York State. Successful completion of these examinations, together with fulfillment of such minor prerequisites as may be required by individual states, permits licensure in the states of Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia, and the District of Columbia, as well as New York State.

Additional information, including applications, format of examinations, and examination schedules are available from the North East Regional Board of Dental Examiners, 400 Deane Avenue N.E., Washington, D.C. 20019.

Dental Hygiene

Graduates of the Division of Dental Hygiene are qualified to take all state and national board examinations.

Officers of Instruction

Anatomy

CHAIRMAN: Professor Michael D. Gershon

ERNEST W. APRIL. *Associate Professor of Anatomy*
B.S., Tufts, 1961; Ph.D., Columbia, 1969

PHILIP W. BRANDT. *Associate Professor of Anatomy*
B.A., Swarthmore, 1952; M.S., Pennsylvania, 1957; Ph.D., Columbia, 1960

CHARLES A. ELY. *Professor of Anatomy*
B.A., Washington and Jefferson, 1936; M.S., Hawaii, 1940; Ph.D., Wisconsin, 1948

MICHAEL D. GERSHON. *Professor of Anatomy*
B.A., Cornell, 1958; M.D., 1963

DAVID GILMAN. *Merritt Professor of Neurology and Professor of Anatomy*
B.A., California (Los Angeles), 1954; M.D., 1957

JOE G. HOLLYFIELD. *Associate Professor of Anatomy (in Ophthalmology)*
B.A., Hendrix, 1960; M.S., Louisiana State, 1963; Ph.D., Texas, 1966

JAMES P. KELLY. *Assistant Professor of Anatomy*
B.A., Harpur, 1966; Ph.D., Washington (St. Louis), 1971

MARY M. L. LEE. *Assistant Professor of Anatomy*
B.A., Hunter, 1963; M.S., Michigan, 1964; Ph.D., Columbia, 1972

DANIEL M. LINKIE. *Assistant Professor of Anatomy (in Obstetrics and Gynecology)*
B.S., State University of New York (Downstate), 1962; M.S., 1963; Ph.D., Michigan, 1971

IRVING L. MOSS. *Professor of Anatomy and Professor of Oral Biology*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

IRVING L. MOSS-SALENTIJN. *Associate Professor of Dentistry (Oral Biology)*
D.D.S., Utrecht, 1967; Ph.D., 1976

CHARLES R. NOBACK. *Professor of Anatomy*
B.S., Cornell, 1936; M.S., New York University, 1938; Ph.D., Minnesota, 1942

ALFRED A. NUNEZ. *Associate Professor of Anatomy*
B.S., St. John's (New York), 1951; M.S., 1953; Ph.D., New York University, 1964

ERICH H. PFENNINGER. *Associate Professor of Anatomy*
M.D., Zurich, 1971

JOHN J. RASWEILER IV. *Assistant Professor of Anatomy*
B.A., Colgate, 1965; Ph.D., Cornell, 1970

ANN-JUDITH SILVERMAN. *Assistant Professor of Anatomy*
B.A., California (Los Angeles), 1967; Ph.D., 1970

IRVING M. TENNYSON. *Professor of Anatomy and Pathology*
B.S., Pennsylvania State, 1946; M.S., Baylor, 1956; Ph.D., Columbia, 1960

Anesthesiology

CHAIRMAN: Professor Henrik H. Bendixen

HENRIK H. BENDIXEN. *Professor of Anesthesiology*
M.D., Copenhagen, 1951

LESTER C. MARK. *Professor of Anesthesiology*
M.D., Toronto, 1941

S. H. NGAI. *Professor of Anesthesiology*
M.B., National Central (China), 1944

Biochemistry

ACTING CHAIRMAN: Professor Parithychery R. Srinivasan

REINHOLD BENESCH. *Professor of Biochemistry*
B.Sc., Leeds, 1941; M.Sc., 1945; Ph.D., Northwestern, 1950

RUTH E. BENESCH. *Associate Professor of Biochemistry*
B.Sc., London, 1946; Ph.D., Northwestern, 1951

MAX A. EISENBERG. *Professor of Biochemistry*
B.A., Brooklyn, 1938; M.S., New York University, 1941; Ph.D., Duke, 1950

PHILIP FEIGELSON. *Professor of Biochemistry (assigned to Cancer Research)*
B.S., Queens (New York) 1947; Ph.D., Wisconsin, 1951

ALLEN M. GOLD. *Associate Professor of Biochemistry*
B.A., Chicago, 1950; Ph.D., Harvard, 1955

DEZIDER GRUNBERGER. *Associate Professor of Biochemistry (assigned to Cancer Research)*
M.Sc., Technical University (Prague), 1950; Ph.D., Czechoslovak Academy of Science, 1956; Sc.D., 1968

RONALD L. HANSON. *Assistant Professor of Biochemistry*
B.A., Minnesota, 1965; Ph.D., Wisconsin, 1970

JOHN D. KARKAS. *Associate Professor of Biochemistry*
B.A., Thessaloniki (Greece), 1952; Ph.D., Columbia, 1962

ALVIN I. KRASNA. *Professor of Biochemistry*
B.A., Yeshiva, 1950; Ph.D., Columbia, 1955

SEYMOUR LIEBERMAN. *Professor of Biochemistry (assigned to Obstetrics and Gynecology)*
B.S., Brooklyn, 1936; M.S., Illinois, 1937; Ph.D., Stanford, 1941

BARBARA W. LOW. *Professor of Biochemistry*
B.A., Oxford, 1942; M.A., 1946; D. Phil., 1948

MAURICE RAPPORT. *Professor of Biochemistry (assigned to Psychiatry)*
B.S., College of the City of New York, 1940; Ph.D., California Institute of Technology, 1944

DAVID B. SPRINSON. *Professor of Biochemistry*
B.S., College of the City of New York, 1931; M.S., New York University, 1936; Ph.D., Columbia, 1946

PARITHYCHERY R. SRINIVASAN. *Professor of Biochemistry*
B.Sc., Madras, 1946; Ph.D., 1953

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MALVIN F. BRAVERMAN. *Assistant Clinical Professor of Dentistry*
B.S., McGill, 1969; D.M.D., Tufts, 1973; M.P.H., North Carolina, 1974

RONALD P. BURAKOFF. *Adjunct Assistant Professor of Dentistry*
B.Sc., McGill, 1969; D.M.D., Tufts, 1973; M.P.H., North Carolina, 1974

RICHARD B. CHANIN. *Adjunct Assistant Professor of Dentistry*
D.M.D., Pennsylvania, 1973; M.B.A., 1974

NEAL A. DEMBY. *Associate Clinical Professor of Dentistry*
B.A., Rutgers, 1964; D.M.D., Pennsylvania, 1968

PHYLLIS A. DETWILER. *Adjunct Assistant Professor of Dentistry*
B.A., Goshen (Indiana), 1969; D.M.D., Harvard, 1976

GEORGE M. GLUCK. *Adjunct Assistant Professor of Dentistry*
B.S., Queens, 1959; D.D.S., New York University, 1964; M.P.H., Columbia, 1964; M.B.A., Fairleigh Dickinson, 1974

EFFREY GOLD. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1965; D.D.S., New York University, 1969

ARTHUR D. GOLDMAN. *Adjunct Assistant Professor of Dentistry*
D.M.D., Tufts, 1957

HARRIET S. GOLDMAN. *Assistant Professor of Dentistry*
B.A., New York University, 1962; D.D.S., 1965; M.P.H., Columbia, 1966

HILTON O. HOSANNAH. *Assistant Clinical Professor of Dentistry*
B.S., Howard, 1952; D.D.S., 1958; M.P.H., Columbia, 1970

LEONE E. JOSEY. *Adjunct Assistant Professor of Dentistry*
B.S., Howard, 1954; D.D.S., 1960

ROBERT M. KNEPPER. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1970; D.D.S., Columbia, 1974

JAMES E. MCINTOSH. *Adjunct Assistant Professor of Dentistry*
B.A., Missouri, 1965; D.D.S., Meharry, 1969; M.P.H., Columbia, 1975

MELVIN N. RASKIN. *Adjunct Assistant Professor of Dentistry*
B.S., New Hampshire, 1938; D.M.D., Tufts, 1943

WILLIAM R. SMITHEA. *Assistant Clinical Professor of Dentistry*
D.D.S., Howard, 1959

DAVID A. SORICELLI. *Adjunct Professor of Dentistry*
D.D.S., Temple, 1955; M.P.H., Harvard, 1958

CHARLTON A. SPARKS. *Adjunct Associate Professor of Dentistry*
B.S., Tennessee State, 1942; D.D.S., Howard, 1949; M.P.H., Columbia, 1969

WILLIAM STEIBEL. *Adjunct Associate Professor of Dentistry*
D.D.S., New York University, 1947; M.P.H., Columbia, 1969

DOLORES M. FRANKLIN SUGGS. *Assistant Clinical Professor of Dentistry*
B.A., Barnard, 1970; D.M.D., Harvard, 1974; M.P.H., Columbia, 1974

PETER B. TERENCE. *Professor of Clinical Dentistry (at Roosevelt Hospital)*
L.L.B., Connecticut, 1940; M.H.A., Northwestern, 1950

BARRY M. WEINBERG. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1956; D.D.S., New York University, 1960

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S. GERALD CARDINALE. *Assistant Clinical Professor of Dentistry*
B.S., St. John's (New York), 1955; D.D.S., New York University, 1959

PAUL DUBOFF. *Associate Clinical Professor of Dentistry*
B.S., Rutgers, 1952; D.D.S., Columbia, 1956

MARTIN HANDLERS. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1945

JOSEPH E. KAHER. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1943; D.M.D., Pittsburgh, 1946

DAVID KAPLAN. *Associate Professor of Dentistry*
B.S., College of the City of New York, 1958; D.D.S., New York University, 1960

MORRIS S. KIRSCHNER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1937; D.M.D., Louisville, 1941

MATTHEW D. LEVIN. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1926

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DONA E. MCKINNEY. *Assistant Professor of Dental Hygiene*
B.S., Columbia, 1971; M.S., 1972

PATRICIA A. MCLEAN. *Associate Professor of Dental Hygiene*
B.S., New York University, 1959; M.A., Columbia, 1961

RONALD B. ODRICH. *Adjunct Assistant Professor of Dentistry*
B.S., Queens, 1958; D.D.S., Columbia, 1959

BERNARD B. TOLPIN. *Adjunct Assistant Professor of Dentistry*
B.A., Michigan, 1956; D.D.S., Columbia, 1960

Education and Behavioral Science

ROBERT L. JACOBSON. *Assistant Clinical Professor of Dentistry*
B.S., Bucknell, 1948; D.D.S., New York University, 1953

PHILIP YABLON. *Assistant Clinical Professor of Dentistry*
B.S., City University of New York, 1955; D.D.S., Columbia, 1959; M.P.H., 1973

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ROBERT L. AMBINDER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1955; D.D.S., New York University, 1961

GERALD H. BESEN. *Associate Clinical Professor of Dentistry*
D.D.S., Minnesota, 1947

MURRAY A. CANTOR. *Associate Clinical Professor of Dentistry*
B.A., Hofstra, 1949; D.D.S., Columbia, 1953

GERALD M. DREW. *Assistant Clinical Professor of Dentistry*
B.A., Pennsylvania, 1944; D.D.S., Michigan, 1948

MARVIN FIRDMAN. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1948; D.D.S., Columbia, 1952

FREDRIC E. GOODMAN. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1962

EDWARD GREENFIELD. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., New York University, 1957

JOSEPH M. LEAVITT. *Clinical Professor of Dentistry*
B.S., Oklahoma, 1936; D.D.S., Columbia, 1940

JACK LEVI. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1960; D.D.S., New York University, 1966

MICHAEL D. LUND. *Assistant Clinical Professor of Dentistry*
D.D.S., Minnesota, 1969; M.S.D., University of Washington, 1975

NELSON I. MENDELL. *Assistant Clinical Professor of Dentistry*
B.A., Pennsylvania, 1961; D.M.D., Tufts, 1965

S. ABEL MOREINIS. *Clinical Professor of Dentistry*
D.D.S., Michigan, 1948

BARRY L. MUSIKANT. *Assistant Clinical Professor of Dentistry*
B.A., Pennsylvania, 1965; D.M.D., 1969

IRVING J. NAIDORF. *Professor of Dentistry*
B.A., New York University, 1937; D.D.S., Columbia, 1941

MICHAEL PLESSETTE. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1957; D.D.S., Pennsylvania, 1960

THOMAS W. PORTWAY. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1950; D.D.S., Columbia, 1956

ROBERT RIPP. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1952; D.D.S., New York University, 1956

RED ROTHENBERG. *Clinical Professor of Dentistry*
D.M.D., Goettingen, 1935; D.D.S., Pennsylvania, 1937

JEFFREY S. SENZER. *Assistant Clinical Professor of Dentistry*
B.A., Hunter, 1964; M.A., Brooklyn, 1967; D.D.S., Columbia, 1973

CHARLES S. SOLOMON. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

HOWARD B. VOGEL. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1950

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ROY BOELSTLER. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1956; D.D.S., 1959

STANISLAW H. BRZUSTOWICZ. *Clinical Professor of Dentistry*
B.S., St. John's, 1940; D.D.S., Columbia, 1943

EDWARD A. CAIN, JR. *Professor of Dentistry*
B.S., Fordham, 1942; D.D.S., Columbia, 1945

PANDELIS CAMESAS. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1949; D.D.S., Columbia, 1953

KENNETH C. DEESEN. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1948

HERBERT P. FRITZ. *Assistant Clinical Professor of Dentistry*
B.S., New York University, 1933; D.D.S., Columbia, 1936

WESLEY HALPERT. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., Columbia, 1946

FRANK L. MELLANA. *Assistant Clinical Professor of Dentistry*
B.S.; Fordham, 1956; D.D.S., Columbia, 1962

JOSEPH A. PIANPIANO. *Assistant Clinical Professor of Dentistry*
B.S., Fordham, 1958; D.D.S., Columbia, 1962

GEORGE RUDENSKY. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1958

STANLEY R. SADLES. *Assistant Clinical Professor of Dentistry*
B.S., Columbia, 1949; D.D.S., 1953

STEVEN S. SCRIVANI. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1948

WILLIAM H. SILVERSTEIN. *Associate Clinical Professor of Dentistry*
D.D.S., Maryland, 1937

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NORMAN KAHN. *Associate Professor of Pharmacology and of Dentistry*
B.A., Columbia, 1954; D.D.S., 1958; Ph.D., 1964

MARLENE KLYVERT. *Assistant Professor of Dentistry*
B.S., Columbia, 1971; M.S., 1972

MELVIN L. MOSS. *Professor of Anatomy and of Dentistry*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

LETTY MOSS-SALENTIJN. *Associate Professor of Dentistry*
D.D.S., Utrecht, 1967; Ph.D., 1976

IRVING J. NAIDORF. *Professor of Dentistry*
B.A., New York University, 1937; D.D.S., Columbia, 1941

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B.A., Pennsylvania, 1950; D.D.S., New York University, 1954

HAROLD D. BAURMASH. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1948

KOURKEN A. DAGLIAN. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., Columbia, 1943

ANTHONY L. DI MANGO. *Associate Clinical Professor of Dentistry*
D.D.S., Georgetown, 1953

AN Y. HU. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1954

BERTRAM KLATSKIN. *Clinical Professor of Dentistry*
B.A., Cornell, 1937; D.D.S., Columbia, 1941

LOUIS J. LOSCALZO. *Clinical Professor of Dentistry*
B.A., Fordham, 1942; D.D.S., Temple, 1946

LOUIS MANDEL. *Clinical Professor of Dentistry*
B.A., New York University, 1943; D.D.S., Columbia, 1946

GEORGE A. MINERVINI. *Clinical Professor of Dentistry*
B.A., Columbia, 1942; D.D.S., 1946

GEORGE L. O'GRADY. *Clinical Professor of Dentistry*
B.A., Fordham, 1929; D.D.S., Columbia, 1934

HERBERT RABINOWITZ. *Assistant Clinical Professor of Dentistry*
D.D.S., Pittsburgh, 1943

DANIEL D. SCHUBE. *Associate Clinical Professor of Dentistry*
B.A., Brooklyn, 1945; D.D.S., New York University, 1949

BOAZ M. SHATTAN. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1940; D.D.S., 1943

MORTON JAY STERN. *Associate Clinical Professor of Dentistry*
B.A., Upsala, 1949; D.D.S., Temple, 1953

MORTON A. WINNER. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1959; D.D.S., Columbia, 1963

At Harlem Hospital:

ARTHUR C. WILLIAMS. *Associate Professor of Clinical Dentistry*
B.S., Howard, 1938; D.D.S., 1942; M.P.H., Harvard, 1945; M.S., New York University, 1959

At Roosevelt Hospital:

GERALD E. LEDERMAN. *Assistant Clinical Professor of Dentistry*
B.S., Columbia, 1960; D.D.S., 1964

ANDREW M. LINZ. *Professor of Clinical Dentistry*
D.D.S., Pennsylvania, 1948; M.Sc. (Dent.), 1953

At St. Luke's Hospital:

JEROME T. FRIEDMAN. *Clinical Professor of Dentistry*
B.A., Miami University (Ohio), 1956; D.D.S., Ohio State, 1961

JAY P. GOLDSMITH. *Assistant Clinical Professor of Dentistry*
D.M.D., Pennsylvania, 1966

RICHARD H. SAND. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1955; D.D.S., New York University, 1959

Orofacial Growth and Development

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ELEANOR APPLEBAUM. *Assistant Clinical Professor of Dentistry*
M.A., Hunter, 1969; M.S., Sarah Lawrence 1973

ERLINDA A. BENEDICTO. *Assistant Clinical Professor of Dentistry*
D.M.D., University of the East (Philippines), 1962

MARK S. COHEN. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1971; D.D.S., Columbia, 1975

SIDNEY L. HOROWITZ. *Professor of Dentistry*
B.S., Columbia, 1942; D.D.S., New York University, 1945

GEORGE C. KIRIAKOPOULOS. *Associate Clinical Professor of Dentistry*
B.A., Brooklyn, 1950; D.D.S., Columbia, 1954

GARY L. LIGHTER. *Assistant Clinical Professor of Dentistry*
B.A., State University of New York (Buffalo), 1965; D.M.D., Pennsylvania, 1969

BERNARD M. RIKLIN. *Assistant Clinical Professor of Dentistry*
B.S., Illinois, 1943; D.D.S., 1944

MATTHEW A. ROCCO. *Assistant Clinical Professor of Dentistry*
B.A., Seton Hall, 1955; D.D.S., Maryland, 1959

LAWRENCE R. SIEGEL. *Assistant Clinical Professor of Dentistry*
B.A., Upsala, 1963; D.D.S., Temple, 1967

Orthodontics

DIRECTOR: Professor Nicholas A. Di Salvo

LAWRENCE W. BERGMANN. *Assistant Clinical Professor of Dentistry*
B.A., Colgate, 1951; D.D.S., Georgetown, 1958

ABRAHAM M. BLECHMAN. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1945; D.D.S., 1948

MARINO A. BRAMANTE. *Associate Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1957

PETER H. CAIN. *Assistant Clinical Professor of Dentistry*
B.A., Kenyon, 1969; D.D.S., Columbia, 1973

NICHOLAS A. DI SALVO. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945; Ph.D., 1952

MONROE M. GLIEDMAN. *Associate Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

RICHARD GLIEDMAN. *Associate Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

ROBERT J. HUETTNER. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1949; D.D.S., Michigan, 1949; M.S., 1950

ROBERT J. ISAACSON. *Assistant Clinical Professor of Dentistry*
B.S., Rutgers, 1953; M.S., 1954; D.D.S., Columbia, 1958

VIKTORIA I. KOHLER. *Assistant Professor of Dentistry*
D.D.S., Faculdade de Odontologia de Sao Jose dos Campos (Brazil), 1966

GUSTAVE LASOFF. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1940; D.D.S., Medical College of Virginia, 1944

MELVYN M. LEIFERT. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1963; D.D.S., State University of New York (Buffalo), 1967

MALCOLM E. MEISTRELL, JR. *Assistant Clinical Professor of Dentistry*
B.A., Princeton, 1960; D.D.S., Michigan, 1964

HENRY I. NAHOUM. *Professor of Dentistry*
B.A., Brooklyn, 1940; D.D.S. Columbia, 1943

ARMAND M. OPPENHEIMER. *Clinical Professor of Dentistry*
B.A., College of the City of New York, 1926; B.S., Columbia, 1927; D.D.S., 1929

HERBERT P. OSTREICHER. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1943; D.D.S., 1945

JULIUS D. TARSHIS. *Associate Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1949

ISABEL T. WHITEHILL-GRAYSON. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1954; M.S., 1957; D.D.S., 1961

CLIFFORD L. WHITMAN. *Adjunct Professor of Dentistry*
D.D.S., Maryland, 1927

ALBERT N. ZENGO. *Associate Clinical Professor of Dentistry*
B.S., Tufts, 1959; D.D.S., Columbia, 1964

Section of Special Dental Services:

JOSEPH LUBAN. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., Columbia, 1942

Pedodontics

DIRECTOR: Professor Charles A. Sweet, Jr.

MARTIN J. DAVIS. *Assistant Professor of Dentistry*
B.A., Yale, 1970; D.D.S., Columbia, 1974

ALBERT GREEN. *Associate Clinical Professor of Dentistry*
B.A., Temple, 1950; D.D.S., Pennsylvania, 1954

THEODORE G. GRIGGS, III. *Assistant Clinical Professor of Dentistry*
B.S., Toledo, 1957; D.M.D., Fairleigh Dickinson, 1961

MARVIN B. KING. *Associate Clinical Professor of Dentistry*
D.D.S., New York University, 1954

SEYMOUR KOSTER. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949

GUY D. METCALF. *Assistant Clinical Professor of Dentistry*
B.A., Clark, 1970; D.D.S., Columbia, 1975

ALFRED J. MEZZA. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1959; D.D.S., Fairleigh Dickinson, 1963

EDWARD J. PIESMAN. *Assistant Clinical Professor of Dentistry*
B.A., Queens, 1966; D.M.D., Pennsylvania, 1970

BARBARA B. ROCCO. *Assistant Clinical Professor of Dentistry*
B.A., Syracuse, 1956; D.D.S., Maryland, 1959

ARNOLD ROSENBERG. *Clinical Professor of Dentistry*
B.S., New York University, 1943; D.D.S., 1945

DANIEL SILFEN. *Assistant Clinical Professor of Dentistry*
B.A., Pennsylvania, 1942; D.D.S., 1945

CHARLES A. SWEET, JR. *Professor of Dentistry*
B.S., Pacific, 1946; D.D.S., 1946

FRANK VALENTINE. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1963; D.M.D., Pennsylvania, 1967

DAVID H. WOLMER. *Adjunct Assistant Professor of Dentistry*
B.A., Hunter, 1955; D.D.S., Columbia, 1958

At Roosevelt Hospital:

LILLIAN H. BACHMAN. *Assistant Clinical Professor of Dentistry*
B.S., Queens, 1959; D.D.S., Columbia, 1963; M.A., 1967

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VINCENT J. ABBATIELLO. *Assistant Clinical Professor of Dentistry*
B.A., Cornell, 1966; D.M.D., Harvard, 1970

MICHAEL BARON. *Assistant Clinical Professor of Dentistry*
D.D.S., Georgetown, 1968

BARRY L. BEHRENS. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn College of Pharmacy, 1965; D.D.S. Medical College of Virginia, 1969

FRANK E. BEUBE. *Clinical Professor of Dentistry*
L.D.S., D.D.S., Toronto, 1930

ROBERT L. BLAIR. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1965; D.D.S., Temple, 1969

HERMAN CANTOR. *Assistant Clinical Professor of Dentistry*
B.S., New York University, 1934; D.D.S., 1937

ALVIN D. CEDERBAUM. *Associate Clinical Professor of Dentistry*
D.M.D., Tufts, 1939

RAYMOND Z. DARAKJIAN. *Assistant Clinical Professor of Dentistry*
D.D.S., Fairleigh Dickinson, 1968

DANIEL H. FINE. *Assistant Professor of Dentistry*
B.S., Queens, 1962; D.M.D., Pennsylvania, 1965

P. CHARLES GABRIELE. *Associate Clinical Professor of Dentistry*
B.A., Brooklyn, 1956; D.D.S., Pennsylvania, 1958

ARNOLD M. GEIGER. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1938; D.D.S., Pennsylvania, 1941

GEORGE L. GLICK. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1967; D.D.S., Temple, 1971

- STEVEN I. GOLD. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1966
- ROBERT GOTTSEGEN. *Professor of Dentistry*
B.A., Michigan, 1939; D.D.S., Columbia, 1943
- LEONARD S. HIRSCHFELD. *Clinical Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944
- RAYMOND F. JOHNSON, JR. *Associate Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1952
- IRVING A. KAREL. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1951
- JOEL S. KLEIMAN. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1968; D.D.S., Columbia, 1971
- BURTON LANGER. *Associate Clinical Professor of Dentistry*
B.S., Tufts, 1960; D.M.D., 1964; M.Sc.D., Boston, 1966
- ALAN LUBARR. *Assistant Clinical Professor of Dentistry*
B.A., Yeshiva, 1964; D.M.D., Pennsylvania, 1968
- DOUGLAS L. MARION. *Assistant Clinical Professor of Dentistry*
B.A., Susquehanna, 1970; D.D.S., Georgetown, 1974
- MELVIN L. MORRIS. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1934; M.A., Columbia, 1937; D.D.S., 1941
- BERNARD S. MOSKOW. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1954; M.Sc.D., Pennsylvania, 1958
- MORTON C. RENNERT. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958
- ALBERT SALKIND. *Associate Clinical Professor of Dentistry*
D.D.S., Marquette, 1943
- MICHAEL B. SAVIN. *Assistant Clinical Professor of Dentistry*
B.A., Rochester, 1961; D.M.D., Pennsylvania, 1965
- MURRAY A. SCHWARTZ. *Clinical Professor of Dentistry*
B.A., New York University, 1950; D.D.S., Columbia, 1953
- STEPHEN SILSTON. *Assistant Clinical Professor of Dentistry*
B.S., Indiana, 1968; D.D.S., 1971; M.Sc.D., Boston, 1973
- MARVIN SOLOMON. *Assistant Clinical Professor of Dentistry*
B. Chem. E., College of the City of New York, 1960; D.D.S., Fairleigh Dickinson, 1965
- MARVIN SPODEK. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1952; D.D.S., Columbia, 1956
- STEPHEN D. STEIN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1962; D.D.S., 1966
- PAUL J. TANNENBAUM. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1957; D.D.S., Columbia, 1961
- BERNARD H. WASSERMAN. *Clinical Professor of Dentistry*
B.A., Brooklyn, 1941; D.D.S., Columbia, 1944
- MONROE M. WEINSTEIN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1952; D.D.S., 1957

ALAN A. WINTER. *Assistant Clinical Professor of Dentistry*
B.A., Rutgers, 1969; D.D.S., New York University, 1973

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D.D.S., Michigan, 1971

BERNARD M. BRACHFELD. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1958; Ph.D., 1973

ROBERT S. BREAKSTONE. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1945

HAROLD P. COBIN. *Assistant Clinical Professor of Dentistry*
B.S., St. John's (New York), 1927; D.D.S., Columbia, 1931

IRWIN DAMBROT. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1950; D.D.S., Columbia, 1955

RICHARD DELSON. *Assistant Clinical Professor of Dentistry*
B.A., Queens, 1966; D.M.D., Tufts, 1970

ROBERT S. GOLDMAN. *Assistant Clinical Professor of Dentistry*
B.A., Temple, 1963; D.M.D., Pittsburgh, 1968

FRED I. GOODSTEIN. *Assistant Clinical Professor of Dentistry*
B.S., State University of New York (Stony Brook), 1969; D.D.S., Columbia, 1973

HOWARD GORDON. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1967

STANLEY HELLER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., New York University, 1949; M.A. Columbia, 1950

NATHANIEL H. LENCHNER. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1943; D.D.S., 1950

MARVIN P. LEVIN. *Assistant Clinical Professor of Dentistry*
B.A., Minnesota, 1954; B.S., 1960; D.D.S., 1962

D. HAROLD LINN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1942; D.D.S., 1945

IRWIN D. MANDEL. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945

HERBERT I. OSHRAIN. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., New York University, 1942

JAY ROTHSCHILD. *Assistant Clinical Professor of Dentistry*
B.A., Yeshiva, 1957; D.D.S., New York University, 1961

ARTHUR SHAIN. *Associate Clinical Professor of Dentistry*
B.S., New York University, 1935; D.D.S., Dalhousie, 1939; M.P.H., Columbia, 1974

STEPHEN WOTMAN. *Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1956

Prosthodontics

DIRECTOR: Professor John J. Lucca

- JACOB ABELSON. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., Columbia, 1945
- MARC N. BENHURI. *Assistant Clinical Professor of Dentistry*
B.S., New Haven, 1969; D.M.D., Pittsburgh, 1975
- HAROLD H. BLANK. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1939; D.D.S., Columbia, 1942
- VICTOR S. CARONIA. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1957
- GERARD L. COURTADE. *Adjunct Professor of Dentistry*
B.A., Columbia, 1937; D.D.S., 1940
- JOSEPH A. DE JULIA. *Associate Clinical Professor of Dentistry*
B.S., Pittsburgh, 1951; D.D.S., Columbia, 1962
- GUSTAV T. DURRER. *Associate Clinical Professor of Dentistry*
Dr. Med. Dent., Berne, 1937; D.D.S., Pennsylvania, 1940
- STANLEY P. FREEMAN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1957; D.D.S., McGill, 1961
- JOEL FRIEDMAN. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1936; D.D.S., Columbia, 1939
- JOEL GOLDIN. *Associate Clinical Professor of Dentistry*
B.A., Amherst, 1959; D.M.D., Harvard, 1963
- ALVIN J. GRAYSON. *Associate Clinical Professor of Dentistry*
D.D.S., Indiana, 1952
- GEORGE W. HINDELS. *Adjunct Professor of Dentistry*
M.D., Vienna, 1938; D.D.S., Columbia, 1943
- ALFRED HOLZMAN. *Assistant Clinical Professor of Dentistry*
D.D.S., Michigan, 1927
- ARNOLD S. JUTKOWITZ. *Assistant Clinical Professor of Dentistry*
D.M.D., Pennsylvania, 1966
- ARTHUR J. KORF. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1951
- JOHN J. LUCCA. *Professor of Dentistry*
B.A., New York University, 1941; D.D.S., Columbia, 1947
- WILLIAM J. MILLER. *Adjunct Professor of Dentistry*
B.A., New York University, 1940; D.D.S., Columbia, 1943
- ROBERT D. MINER. *Associate Clinical Professor of Dentistry*
B.S., Denison, 1962; D.D.S., Columbia, 1967
- DENNIS N. MOREA. *Assistant Clinical Professor of Dentistry*
B.S., Fordham, 1966; D.D.S., Columbia, 1970
- RALPH K. NEUHAUS. *Adjunct Associate Professor of Dentistry*
B.S., Moravian, 1961; D.D.S., Columbia, 1965
- JOHN D. PIRO. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1946

WILLIAM RAEBECK, JR. *Associate Clinical Professor of Dentistry*
B.S., Colgate, 1948; D.D.S., Columbia, 1947

LOUIS I. RUBINS. *Associate Clinical Professor of Dentistry*
B.S., Queens (New York), 1956; D.D.S., Columbia, 1960

JOHN M. SCAROLA. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1956; D.D.S., Columbia, 1960

HARRY SHPUNTOFF. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943

PETER H. STRIFE II. *Associate Clinical Professor of Dentistry*
B.A., Middlebury, 1959; D.D.S., Pennsylvania, 1959

ENNIO L. UCCELLANI. *Professor of Dentistry*
B.S., College of the City of New York, 1946; D.D.S., Columbia, 1948

MAXWELL WIDROW. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1940

THOMAS A. WILSON. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1968

JEROME A. ZANE. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1943

At Grasslands Hospital:

MAX P. FISHBERG. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., New York University, 1944

ROBERT E. HERLANDS. *Adjunct Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944

Section of Special Dental Services:

SEBASTIAN A. BRUNO. *Clinical Professor of Dentistry*
D.M.D., Tufts, 1948

MARTIN J. FIELDS. *Assistant Clinical Professor of Dentistry*
D.M.D., Tufts, 1948

EUGENE P. LASOTA. *Associate Clinical Professor of Dentistry*
B.A., Hofstra, 1957; D.D.S., Columbia, 1961

STOMATOLOGY

DIRECTOR: Professor Edward V. Zegarelli

MARTIN L. AMES. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949

JACK BUDOWSKY. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1943

JOHN F. CAPRICCIO. *Assistant Clinical Professor of Dentistry*
D.D.S., Georgetown, 1970

ROBERT E. CROWLEY. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939

HAROLD DARWIN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939

JOHN V. DONOVAN. *Assistant Clinical Professor of Dentistry*
B.S., Wagner, 1963; D.D.S., Columbia, 1967

EDGAR GATTEGNO. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1942; D.D.S., Columbia, 1945

CHARLES W. GOLDFARB. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., New York University, 1943

DAVID I. HENDELL. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S. Columbia, 1959

SIDNEY I. HURWITZ. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1933; D.D.S., New York University, 1939

FRANCES R. KARLAN. *Associate Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1942; D.D.S., Columbia, 1949; M.B.A., Fordham, 1972

MORTIMER KARMOL. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943

BERTHOLD KUERER. *Assistant Clinical Professor of Dentistry*
B.A., Hunter, 1950; D.D.S., Columbia, 1955

JOHN K. LIND. *Clinical Professor of Dentistry*
B.S., St. John's, 1951; D.D.S., Columbia, 1957

JAMES A. LIPTON. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1967; D.D.S., Columbia, 1971.

ANDREI M. MARCU. *Assistant Clinical Professor of Dentistry*
M.D., D.D.S., Medico-Pharmacy Institute (Bucharest), 1960

LAWRENCE MARDER. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1949; D.D.S., Columbia, 1954

MICHAEL Z. MARDER. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1963

ROBERT N. SCHIFF. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

MORTON R. SCHOENBERG. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1954; D.D.S., Columbia, 1962

IRVING C. STOWER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1935; D.D.S. Columbia, 1938

JOHN R. VAROSCAK. *Assistant Clinical Professor of Dentistry*
B.S., Fairleigh Dickinson, 1966; D.D.S., 1969

DAVID J. ZEGARELLI. *Assistant Professor of Dentistry and Assistant Professor of Pathology*
B.A., Columbia, 1965; D.D.S., 1969

EDWARD V. ZEGARELLI. *Edwin S. Robinson Professor of Dentistry*
B.A., Columbia, 1934; D.D.S., 1937; M.S., Chicago, 1943

EDWARD ZERDEN. *Associate Clinical Professor of Dentistry*
B.A., Michigan, 1941; D.D.S., New York University, 1945

Psychiatric Dental Service:

DIRECTOR: Professor Austin H. Kutscher

HERBERT D. AYERS. *Clinical Professor of Dentistry*
B.A., Columbia, 1929; D.D.S., 1931

WILLIAM C. BARAL. *Assistant Clinical Professor of Dentistry*
B.S., Columbia, 1950; D.D.S., 1953

MARTIN BASSIUR. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1964; D.D.S., 1968

DANIEL J. CHERICO. *Assistant Clinical Professor of Dentistry*
B.A., St. Joseph's Seminary, 1968; Ph.D., Indiana, 1973

JOSEPH C. DELISI. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1952

BERNARD GURIAN. *Assistant Clinical Professor of Dentistry*
B.S., Illinois, 1937; D.D.S., 1939

HERMAN S. HARRIS. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1929

ELLEN N. HOSIOSKY. *Associate Clinical Professor of Dentistry*
D.M.D., Basle, 1935; D.H., Guggenheim Dental Clinic, 1939; D.D.S., Columbia, 1947

AUSTIN H. KUTSCHER. *Associate Professor of Dentistry*
B.S., New York University, 1945; D.D.S., Columbia, 1946

JACK J. WEINER. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1924

JAY WEISS. *Assistant Clinical Professor of Dentistry*
B.A., Harvard, 1948; D.M.D., Tufts, 1952

Section of Special Dental Services:

JEROME BARTWINK. *Assistant Clinical Professor of Dentistry*
D.M.D., Tufts, 1948

MORTON S. BROD. *Associate Clinical Professor of Dentistry*
B.A., Adelphi, 1951; D.D.S., Columbia, 1955

JOSEPH J. MARBACH. *Clinical Professor of Dentistry*
B.A., Drew, 1956; D.D.S., Pennsylvania, 1960

FRANK P. PETRONELLA. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1970

DAVID ZEISLER. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1930; D.D.S., Columbia, 1934

Dermatology

CHAIRMAN: Professor Leonard C. Harber

LEONARD C. HARBER. *Professor of Dermatology*
B.A., Johns Hopkins, 1949; M.D., New York University, 1953

SAUL L. SANDERS. *Clinical Professor of Dermatology*
B.A., Kenyon, 1950; M.D., Cornell, 1954

RICHARD A. WALZER. *Associate Clinical Professor of Dermatology*
B.A., Harvard, 1952; M.D., Columbia, 1956

Medicine

CHAIRMAN: Professor Daniel V. Kimberg

HENRY ARANOW, JR. *Samuel W. Lambert Professor of Medicine*
B.A., Harvard, 1935; M.D., Columbia, 1938

LESLIE BAER. *Associate Professor of Medicine*
B.A., Wisconsin, 1959; M.D., Columbia, 1963

RALPH S. BLUME. *Assistant Clinical Professor of Medicine*
B.A., Amherst, 1960; M.D., Columbia, 1964

STUART W. COSGRIFF. *Clinical Professor of Medicine*
B.A., Holy Cross, 1938; M.D., Columbia, 1942

WENDELL B. HATFIELD. *Assistant Professor of Clinical Medicine*
B.A., Columbia, 1953; M.D., 1956

ROBERT H. HEISSENBUTTEL. *Assistant Professor of Clinical Medicine*
B.A., Thiel, 1959; M.D., Columbia, 1963

DONALD A. HOLUB. *Professor of Clinical Medicine*
B.A., Columbia, 1949; M.D., 1952

GEORGE A. HYMAN. *Associate Clinical Professor of Medicine*
B.A., Columbia, 1942; M.D., 1945

PAUL K. JOHNSON. *Assistant Clinical Professor of Medicine*
B.A., Hamilton, 1949; M.D., Columbia, 1953

DANIEL V. KIMBERG. *Professor of Medicine*
B.A., Washington and Jefferson, 1953; M.D., Columbia, 1957

EDGAR LEIFER. *Professor of Clinical Medicine*
B.S., College of the City of New York, 1937; M.A., Columbia, 1939; Ph.D., 1941; M.D., 1946

JANE H. MORSE. *Associate Professor of Clinical Medicine*
B.A., Smith, 1951; M.D., Columbia, 1955

HANS W. NEUBERG. *Assistant Professor of Clinical Medicine*
B.A., Wagner, 1941; M.D., Columbia, 1950

HYMIE L. NOSSEL. *Professor of Medicine*
M.B., Ch.B., Cape Town, 1953; Ph.D., Oxon, 1962

KERMIT L. PINES. *Clinical Professor of Medicine*
B.A., Columbia, 1937; M.D., 1942

Microbiology

CHAIRMAN: Professor Harold S. Ginsberg

PAUL D. ELLNER. *Professor of Microbiology*
B.S., Long Island, 1949; M.S., Southern California, 1952; Ph.D., Maryland, 1956

DEAN L. ENGELHARDT. *Assistant Professor of Microbiology*
B.A., Amherst, 1961; M.A., 1963; Ph.D., Rockefeller, 1967

MARCIA J. ENSINGER. *Assistant Professor of Microbiology*
B.S., Cornell, 1967; Ph.D., Pennsylvania, 1973

BERNARD F. ERLANGER. *Professor of Microbiology*
B.S., College of the City of New York, 1943; M.A., New York University, 1949; Ph.D., Columbia, 1951

HAROLD S. GINSBERG. *Professor of Microbiology*
B.A., Duke, 1937; M.D., Tulane, 1941

RAMAREDDY V. GUNTAKA. *Assistant Professor of Microbiology*
B.S., Andhra (India), 1963; M.Sc., Agra (India), 1965; Ph.D., Kansas, 1970

GEORGE A. HASHIM. *Associate Professor of Microbiology (in Surgery)*
Ph.D., Columbia, 1967

DAVID S. HODES. *Assistant Professor of Pediatrics and Microbiology*
A.B., Princeton, 1963; M.D., Harvard, 1969.

ELVIN A. KABAT. *Professor of Microbiology and Human Genetics and Development*
B.S., College of the City of New York, 1932; M.A., Columbia, 1934; Ph.D., 1937

WLADISLAW MANSKI. *Professor of Microbiology*
M. Phil., Warsaw, 1939; D.Sc., Wroclaw, 1951

CHRISTINE A. MILCAREK. *Assistant Professor of Microbiology*
B.A., Duquesne, 1968; Ph.D., Johns Hopkins, 1972

COUNCILMAN MORGAN. *Professor of Microbiology*
B.S., Harvard, 1943; M.D., Columbia, 1946

SHERIE L. MORRISON. *Assistant Professor of Microbiology*
B.A., Stanford, 1963; Ph.D., 1966

BENVENUTO PERNIS. *Professor of Microbiology*
M.D., Milan (Italy), 1947

AUGUS C. SAMPATH. *Associate Clinical Professor of Pathology in Microbiology*
D.Sc., Strasbourg, 1966

AZRA SHAHIDI. *Adjunct Assistant Professor of Microbiology*
M.S., Wisconsin, 1963; Ph.D., Missouri, 1967

SAUL J. SILVERSTEIN. *Assistant Professor of Microbiology*
B.S., Cornell, 1968; Ph.D., Florida, 1971

WILLIAM T. SPECK. *Assistant Professor of Microbiology*
B.A., Rutgers, 1963; M.D., Bowman Gray, 1968

CHARLES S. H. YOUNG. *Assistant Professor of Microbiology*
B.A., Oxford, 1966; D. Phil., 1969

Otolaryngology

ACTING CHAIRMAN: Professor Robert M. Hui

ROBERT M. HUI. *Professor of Clinical Otolaryngology*
B.A., Southern California, 1943; M.D., 1946

JOHN D. PIRO. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*
B.A., Fordham, 1943; D.D.S., Columbia, 1946

ROBIN M. RANKOW. *Associate Professor of Clinical Otolaryngology*
B.S., College of the City of New York, 1935; D.D.S., Columbia, 1940; M.D., Rochester, 1950

LAWRENCE SAVETSKY. *Assistant Professor of Clinical Otolaryngology*
B.A., New York University, 1951; M.D., State University of New York, 1955

Pathology

CHAIRMAN: Professor Donald West King

GILES G. ALLARD. *Assistant Clinical Professor of Pathology*
M.D., Laval (Canada), 1950

LUCRETIA ALLEN. *Assistant Clinical Professor of Pathology*
B.A., New York University, 1948; M.D., State University of New York, 1952

IRWIN ALMENOFF. *Associate Clinical Professor of Pathology*
B.S., College of the City of New York, 1948; M.D., Cornell, 1952

RICHARD AXEL. *Assistant Professor of Pathology*
B.A., Columbia, 1967; M.D., Johns Hopkins, 1970

PAUL BACHNER. *Adjunct Assistant Professor of Pathology*
B.A., College of the City of New York, 1959; M.D., Columbia, 1963

ERNEST BADEN. *Adjunct Associate Professor of Pathology*
M.A., Sorbonne, 1946; D.D.S., New York University, 1950; M.D., Geneva, 1963

CHARLES F. BEGG. *Clinical Professor of Pathology*
B.A., Boston, 1935; M.D., Harvard, 1939

DANIEL BENNINGHOFF. *Associate Clinical Professor of Pathology*
B.A., Yale, 1949; M.D., Columbia, 1953

WILLIAM BERNHARD. *Assistant Clinical Professor of Pathology*
B.S., Wisconsin, 1927; M.D., Pennsylvania, 1931

MELVIN N. BLAKE. *Associate Clinical Professor of Oral Pathology*
D.D.S., New York University, 1955

WILLIAM A. BLANC. *Professor of Pathology*
B.A., Geneva, 1940; M.D., 1947; Ph.D., 1952

THOMAS BLUMENFELD. *Assistant Professor of Pediatric Pathology*
B.S., North Carolina, 1960; M.D., Tennessee, 1964

CARMIA BOREK. *Associate Professor of Clinical Pathology (in Radiology)*
B.S., American, 1959; M.S., George Washington, 1961; Ph.D., Weizman Institute, 1967

LAZAREVIC BOZIDAR. *Assistant Clinical Professor of Pathology*
M.D., Belgrade, 1956

A. WHITLEY BRANWOOD. *Professor of Pathology*
M.B., Ch.B., Edinburgh, 1942; M.D., 1948

DONALD E. BROWN. *Associate Clinical Professor of Pathology*
M.D., Harvard, 1943

JOHN M. BUDINGER. *Associate Clinical Professor of Pathology*
B.S., Northwestern, 1950; M.D., 1954

KENNETH BUTTON. *Assistant Professor of Clinical Pathology*
B.A., Indiana, 1966; M.D., 1970

PREM M. CHAUHAN. *Assistant Professor of Clinical Pathology*
M.D., Lady Harding Medical College (India), 1948

- ADA B. DECHABON. *Assistant Clinical Professor of Pathology*
B.S., Liceo Señoritas, 1949; M.D., Buenos Aires, 1957
- RICHARD DEFENDINI. *Associate Professor of Clinical Neuropathology*
B.A., Michigan, 1948; M.A., 1951; M.D., Rochester, 1961
- ARLINE D. DEITCH. *Associate Professor of Clinical Pathology*
B.A., Brooklyn, 1944; M.A., Columbia, 1946; Ph.D., 1954
- JOHN J. DIRE. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1953; M.D., George Washington, 1957
- LARRY E. DOUGLASS. *Adjunct Assistant Professor of Pathology*
B.A., Washington (St. Louis), 1959; M.D., Vanderbilt, 1960
- PHILIP E. DUFFY. *Professor of Neuropathology*
B.A., Columbia, 1943; M.D., 1947
- STEFAN E. EPSTEIN. *Assistant Clinical Professor of Pathology*
B.A., Columbia, 1956; M.D., State University of New York, 1960
- AZAK S. ERYOL. *Assistant Professor of Pathology*
B.S., St. Michael, 1956; M.D., Istanbul, 1962
- CECILIA FENOGLIO. *Assistant Professor of Pathology*
B.S., St. Elizabeth, 1965; M.D., Georgetown, 1969
- JOHN J. FENOGLIO. *Assistant Professor of Pathology*
B.S., Harvard, 1965; M.D., Georgetown, 1969
- HAROLD P. GAETZ. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1953; M.D., 1958
- ROBERT S. GALEN. *Assistant Clinical Professor of Pathology*
B.A., Boston, 1966; M.D., 1970
- S. RAYMOND GAMBINO. *Professor of Pathology*
B.S., Antioch, 1948; M.D., Rochester, 1952
- RUDOLF GARRET. *Clinical Professor of Pathology*
M.D., Poland, 1939
- LESTER M. GELLER. *Associate Professor of Neuropathology*
B.A., Cornell, 1947; M.A., Michigan State, 1948; Ph.D., New York University, 1953
- HOWARD B. GOLDSTEIN. *Adjunct Assistant Professor of Pathology*
B.A., Colgate, 1955; M.D., Albany Medical College, 1959
- GABRIEL GODMAN. *Professor of Pathology*
B.A., New York University, 1941; M.D., 1944
- REBA M. GOODMAN. *Associate Professor of Clinical Pathology*
B.A., Indiana, 1949; Ph.D., Columbia, 1955
- JOHN G. GORMAN. *Clinical Professor of Pathology*
M.B., B.S., Melbourne, 1953
- LISELOTTE GRAF. *Associate Professor of Clinical Pathology*
M.D., Vienna, 1937
- ROSS M. GREY. *Associate Professor of Pathology*
D.V.M., Alabama Polytechnical Institute, 1945
- JACK W. C. HAGSTROM. *Associate Professor of Pathology*
B.A., Amherst, 1955; M.D., Cornell, 1959

- CLINTON VAN ZANDT HAWN. *Clinical Professor of Pathology*
B.A., Williams, 1937; M.D., Harvard, 1941
- ARTHUR HAYS. *Assistant Professor of Neuropathology*
B.A., Dartmouth, 1962; B.M.S., 1963; M.D., Colorado, 1966
- VICTOR D. HERBERT. *Clinical Professor of Pathology*
B.S., Columbia, 1948; M.D., 1952
- ROBERT L. HIRSCH. *Associate Clinical Professor of Pathology*
B.A., Cornell, 1947; M.D., 1951
- ARTHUR I. HURVITZ. *Adjunct Assistant Professor of Pathology*
D.V.M., Michigan State, 1964; Ph.D., California (Davis), 1967
- ROBERT V. P. HUTTER. *Adjunct Professor of Pathology*
B.A., State University of New York (Syracuse), 1950; M.D., 1954; M.A., Yale, 1968
- HARRY L. IOACHIM. *Adjunct Professor of Pathology*
M.D., Bucharest, 1949
- ELIZABETH JACOB. *Assistant Professor of Clinical Pathology*
M.B., B.S., India, 1955
- AUSTIN D. JOHNSTON. *Professor of Clinical Pathology (assigned to Orthopedic Surgery)*
B.A., Columbia, 1945; M.D., 1947
- CATHERINE KAMBOLIS. *Adjunct Assistant Professor of Pathology*
M.D., Athens, 1955
- KENDALL KANE. *Assistant Clinical Professor of Pathology*
B.A., Princeton, 1955; M.D., Columbia, 1960
- MAVIS KAUFMAN. *Associate Professor of Neuropathology (assigned to Psychiatry)*
M.D., New York Medical College, 1944
- DONALD WEST KING. *Francis Delafield Professor of Pathology*
M.D., Syracuse, 1949
- MARY ELIZABETH KING. *Associate Professor of Clinical Pathology*
B.A., Smith, 1947; M.D., Columbia, 1951
- JOHN Y. KIYASU. *Associate Clinical Professor of Pathology*
B.A., California, 1950; M.A., 1951; Ph.D., 1955
- PAUL R. KRIEGER. *Adjunct Assistant Professor of Pathology*
B.S., College of the City of New York, 1967; M.D., New York University, 1971
- MARTIN S. KRUMERMAN. *Assistant Clinical Professor of Pathology*
B.A., New York University, 1961; M.D., 1965
- NATHAN LANE. *Professor of Surgical Pathology*
B.A., Columbia, 1943; M.D., 1945
- RAFFAELE LATTES. *Professor of Surgical Pathology*
M.D., Turin, 1933; Med.Sc.D., Columbia, 1946
- GEORGE LUMB. *Adjunct Professor of Pathology*
M.D., Royal College of Physicians (London), 1946
- ALVIN J. MARX. *Adjunct Assistant Professor of Pathology*
B.A., Cornell, 1959; M.D., Einstein, 1963
- BASIL MOUMGIS. *Adjunct Assistant Professor of Pathology*
M.D., Pittsburgh, 1949

HIROSHI NAKAZAWA. *Assistant Clinical Professor of Pathology*
M.D., Keio (Japan), 1958

ARTEMIS NASH. *Assistant Clinical Professor of Pathology*
B.A., Smith, 1949; M.D., Columbia, 1953

CLAYTON NATTA. *Assistant Professor of Medicine and Pathology*
M.D., Toronto, 1961

CARLOS NAVARRO. *Associate Clinical Professor of Pathology*
B.S., Mexico, 1947; M.D., 1955

ROBERT D. NEWMAN. *Adjunct Assistant Professor of Pathology*
B.S., California (Los Angeles), 1958; M.D., California (San Francisco), 1962

JOSEPH O'BRIEN. *Adjunct Assistant Professor of Pathology*
B.A., Columbia, 1957; M.D., State University of New York (Downstate), 1961

M. RICHARD PACHTER. *Adjunct Associate Professor of Pathology*
M.D., Zurich, 1956

KARL H. PERZIN. *Associate Professor of Clinical Surgical Pathology*
B.A., Columbia, 1954; M.D., 1958

MICHAEL PESEE. *Assistant Professor of Clinical Pathology*
B.S., St. John's, 1967; Ph.D., 1971

SIDNEY PESTKA. *Adjunct Professor of Pathology*
B.A., Princeton, 1957; M.D., Pennsylvania, 1961

LOUISE L. PHILLIPS. *Associate Clinical Professor of Pathology*
B.S., William and Mary, 1934; M.A., Columbia, 1940

CONRAD PIRANI. *Professor of Pathology*
M.D., Milan, 1938

WILLIAM POLLACK. *Adjunct Associate Professor of Pathology*
M.S., Rutgers, 1950; Ph.D., 1964

RALPH M. RICHART. *Professor of Pathology (assigned to Obstetrics & Gynecology)*
B.A., Johns Hopkins, 1954; M.D., Rochester, 1958

ROBERT R. RICKERT. *Adjunct Associate Professor of Pathology*
B.A., Michigan, 1958; M.D., Johns Hopkins, 1962

THEOPHILUS ROBERTS. *Professor of Clinical Pathology*
M.D., Meharry, 1951

LEON ROIZIN. *Professor of Neuropathology (assigned to Psychiatry)*
B.A., State Lyceum (Bessarabia), 1930; M.D., Royal University (Milan), 1936

EDWARDA RORAT. *Adjunct Assistant Professor of Pathology*
M.D., Stettin (Poland), 1959

STEPHEN RYAN. *Associate Clinical Professor of Pathology*
M.D., Colorado, 1961

ANGUS C. SAMPATH. *Associate Clinical Professor of Pathology*
Dr. Sci., Straubourg, 1966

HENRY G. SCHRIEVER. *Assistant Clinical Professor of Pathology*
B.A., Vermont, 1956; M.D., New York Medical College, 1960

MATHIEU SEIDE. *Assistant Clinical Professor of Pathology*
M.D., Haiti, 1960

- LEWIS SHAPIRO. *Professor of Clinical Dermatology and Pathology*
B.A., Duke, 1948; M.D., 1952
- FRED G. SILVA, II. *Assistant Professor of Pathology*
B.S., Oklahoma, 1968; M.D., 1972
- DAVID N. SILVERS. *Associate Clinical Professor of Dermatology and Pathology*
B.A., Haverford, 1964; M.D., Duke, 1968
- STANLEY S. SIMBONIS. *Associate Clinical Professor of Pathology*
B.S., Yale, 1953; M.D., 1957
- MARIA A. SKERLAVAY. *Assistant Clinical Professor of Pathology*
M.D., Buenos Aires, 1962
- RALPH WOOD SNYDER. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1951; M.D.C.M., 1953
- HAROLD J. SOBEL. *Associate Clinical Professor of Pathology*
B.A., Brooklyn, 1950; M.D., Chicago Medical School, 1954
- SHELDON C. SOMMERS. *Clinical Professor of Pathology*
M.D., Harvard, 1941
- HARRY H. STUMPF. *Adjunct Associate Professor of Pathology*
B.A., New York University, 1947; M.D., State University of New York, 1951
- NICOLE SUCIU-FOCA. *Associate Professor of Pathology (in Surgery)*
B.S., Bucharest, 1959; M.S., 1960; Ph.D., 1965
- RICHARD L. SWARM. *Associate Clinical Professor of Pathology*
B.A., Washington (St. Louis), 1949; M.D., 1950
- MYRON TANNENBAUM. *Associate Professor of Clinical Pathology (assigned to Urology)*
B.S., New York University, 1952; M.S., 1955; Ph.D., 1957; M.D., Chicago, 1961
- VIRGINIA TENNYSON. *Professor of Anatomy and Pathology*
B.S., Pennsylvania State, 1946; M.S., Baylor, 1956; Ph.D., Columbia, 1960
- JOHN A. TERZAKIS. *Adjunct Associate Professor of Pathology*
M.D., New York University, 1961
- PHILIP TOMASHEFSKY. *Assistant Professor of Clinical Pathology*
B.S., College of the City of New York, 1946; M.S., 1951; Ph.D., New York University, 1969
- MYRON E. TRACHT. *Associate Clinical Professor of Pathology*
B.A., Princeton, 1948; M.S., Chicago, 1954; M.D., 1955
- HENRY J. VOGEL. *Professor of Microbiology*
B.S., London, 1939; M.S., New York University, 1941; Ph.D., 1949
- RUTH H. VOGEL. *Associate Professor of Clinical Pathology*
Ph.D., New York University, 1948
- BERNARD M. WAGNER. *Clinical Professor of Pathology*
M.D., Hahnemann, 1949
- DANIEL R. WEISS. *Adjunct Assistant Professor of Pathology*
B.S., Queens, 1950; M.D., 1954
- H. JOACHIM WIGGER. *Associate Professor of Clinical Pediatric Pathology*
M.D., Hamburg, 1954
- NICHOLAS J. WILLSON. *Assistant Professor of Clinical Pathology*
B.S., St. Peter's, 1959; M.D., Seton Hall, 1963

GEORGE D. WILNER. *Associate Professor of Pathology*
B.S., Northwestern, 1962; M.D., 1965

MARIANNE WOLFF. *Associate Professor of Clinical Surgical Pathology*
B.A., Hunter, 1948; M.D., Columbia, 1952

KAITY YANNOPOULOS. *Assistant Clinical Professor of Pathology*
M.D., Thessaloniki (Greece), 1954

DAVID J. ZEGARELLI. *Assistant Professor of Dentistry and Assistant Professor of Pathology*
B.A., Columbia, 1965; D.D.S., 1969

FREDERICK T. ZUGIBE. *Adjunct Associate Professor of Pathology*
B.S., St. Francis (New York), 1951; M.S., Chicago, 1959; Ph.D., 1960; M.D., West Virginia, 1968

Pharmacology

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KENNETH E. EAKINS. *Associate Professor of Pharmacology (in Ophthalmology)*
Ph.D., London, 1962

LOWELL M. GREENBAUM. *Professor of Pharmacology*
B.S., College of the City of New York, 1949; Ph.D., Tufts, 1953

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B.A., Princeton, 1943; M.D., Long Island, 1947

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B.A., Michigan, 1943; Ph.D., Harvard, 1952

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B.A., Columbia, 1954; D.D.S., 1958; Ph.D., 1964

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B.S., Fairleigh Dickinson, 1962; M.S., New York University, 1966; M.A., Hunter, 1966; Ph.D., City University of New York, 1969

HAROLD C. NEU. *Professor of Medicine and of Pharmacology*
B.A., Creighton, 1956; M.D., Johns Hopkins, 1960

SHIH-HSUN NGAI. *Professor of Anesthesiology and of Pharmacology*
M.B., National Central (Nanking), 1944

MICHAEL R. ROSEN. *Assistant Professor of Pharmacology*
B.A., Wesleyan, 1960; M.D., State University of New York, Downstate Medical Center, 1966

WILBUR H. SAWYER. *Professor of Pharmacology*
B.A., Harvard, 1942; M.D., 1945; Ph.D., 1950

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B.A., Vanderbilt, 1966; Ph.D., California (Berkeley), 1969

HSUEH-HWA WANG. *Associate Professor of Pharmacology*
M.D., National Central University Medical School (China), 1946

SHIH-CHUN WANG. *Gustavus and Louise Pfeiffer Professor of Pharmacology*
B.S., Yenching, 1931; M.D., Peiping Union Medical College (China), 1935; Ph.D., Northwestern, 1940

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B.S., Bates, 1963; Ph.D., Columbia, 1968

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B.S., College of the City of New York, 1954; Ph.D., Columbia, 1957; Ph.D., Cambridge, 1959

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M.B., National Taiwan, 1954; Ph.D., Columbia, 1957

RAIMOND EMMERS. *Associate Professor of Physiology*
B.A., East Texas Baptist, 1953; M.A., North Carolina, 1955; Ph.D., Syracuse, 1958

MICHEL FERIN. *Assistant Professor of Physiology (in Obstetrics and Gynecology)*
M.D., Louvain, 1964

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M.B., National Taiwan, 1967; Ph.D., Columbia, 1971

ERIC R. KANDEL. *Professor of Physiology and Psychiatry*
B.A., Harvard, 1952; M.D., New York University, 1956

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B.A., Wooster, 1965; Ph.D., Columbia, 1971

WILLIAM L. NASTUK. *Professor of Physiology*
B.S., Rutgers, 1939; Ph.D., 1945

MERO R. NOCENTI. *Associate Professor of Physiology*
B.A., West Virginia, 1951; M.S., 1952; Ph.D., Rutgers, 1955

JOHN P. REUBEN. *Associate Professor of Physiology (in Neurology)*
B.A., Grinnell, 1954; M.S., Rochester, 1956; Ph.D., Florida, 1959

DAVID SCHACHTER. *Professor of Physiology*
B.S., New York University, 1946; M.D., 1949

JAMES H. SCHWARTZ. *Professor of Physiology*
B.A., Columbia, 1954; M.D., New York University, 1959

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B.A., Reed, 1955; M.D., Oregon, 1957

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M.D., Southern California, 1940

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B.A., Hunter, 1957; M.D., State University of New York (Downstate), 1961; M.P.H., Harvard, 1963

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B.A., Columbia, 1949; M.A., 1952; Ph.D., Michigan, 1961

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B.A., Smith, 1933; M.D., Johns Hopkins, 1937; M.P.H., Columbia, 1952

JACK ELINSON. *Professor of Public Health (Sociomedical Sciences)*
B.S., College of the City of New York, 1937; M.A., George Washington, 1946; Ph.D., 1954

MORTON A. FISHER. *Adjunct Associate Professor of Health Administration*
B.S., Western Reserve, 1942; D.D.S., 1944; B.A., Brooklyn, 1958; M.P.H., Columbia, 1957

SAMUEL WOLFE. *Professor of Public Health (Health Administration)*
M.D., Toronto, 1950; M.P.H., Columbia, 1960; Dr. P. H., 1961

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B.A., Wisconsin, 1941; M.D., 1944

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ASSISTANT ATTENDING DENTAL SURGEONS: Jacob Abelson, Jerome Bartwink, Morton S. Brod, Stanislaw H. Brzustowicz, Raymond Z. Darakjian, Martin J. Davis, Joseph A.

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LaSota, Joseph Luban, Michael Z. Marder, Herbert P. Ostreicher, Barbara B. Rocco, Fr
Rothenberg, Daniel D. Schube, Murray Schwartz, Steven S. Scrivani, Arthur Shain, Mort
J. Stern, Bernard H. Wasserman, Maxwell Widrow, Stephen Wotman, and David J. Zegarel

Academic Calendar, 1977–1978, 1978–1979

Major Religious Holidays

For a statement of University policy regarding religious holidays and applicable dates for this academic year, see *Registration, Expenses, and Financial Aid—Religious Holidays*.

Autumn Term 1977

AUGUST

Monday.* Last day to apply or reapply for October degrees and certificates (see September 8).

SEPTEMBER

5–7 Tuesday–Wednesday.† Registration for the academic year, including payment of fees, for D.D.S. degree candidates.

7 Wednesday.† Registration for the academic year, including payment of fees, for first-year students in the postdoctoral orthodontics program.

7 Wednesday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.

8 Thursday. Last day to file *late* application or renewal of application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

8 Thursday. Classes begin for students in the Division of Dental Hygiene.

8 Thursday. Classes begin for first-year students in the postdoctoral orthodontics program.

12 Monday. Classes begin for D.D.S. degree candidates.

12 Monday. First day to change programs and to apply to audit courses.

14 Wednesday.† Registration, for the academic year, including payment of fees for all students in the postdoctoral programs except for first-year orthodontics students.

15 Thursday. Classes begin for all students in the postdoctoral programs except for first-year orthodontics students.

16 Friday. Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**

OCTOBER

16 Wednesday. Award of October degrees and certificates.

18 Friday. Last day to drop courses for students in the Division of Dental Hygiene.

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

NOVEMBER

4 Friday.* Last day to apply or reapply for January degrees and certificates (see December 9).

7 Monday. Academic holiday for students in the Division of Dental Hygiene.

8 Tuesday. Election Day. Holiday for students in all programs.

24-27 Thursday-Sunday. Thanksgiving holidays for students in all programs.

DECEMBER

9 Friday. Last day to file late application or renewal of application for January degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

17 Saturday, through January 1, 1978, Sunday. Winter holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.

24 Saturday, through January 19, 1978, Thursday. Winter holidays for students in the Division of Dental Hygiene.

Spring Term 1978

JANUARY

20 Friday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.

23 Monday. Classes begin for students in the Division of Dental Hygiene.

25 Wednesday. Award of January degrees and certificates.

26 Thursday. First day to change programs and to apply to audit courses.

FEBRUARY

1 Wednesday. Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**

16 Monday. **Washington's Birthday. Holiday for D.D.S. degree candidates and for students in the postdoctoral programs.**

20 Monday.* Last day to apply or reapply for May degrees and certificates (see April 10)

MARCH

3 Friday. Last day to drop courses for students in the Division of Dental Hygiene.

12-19 Sunday-Sunday. Spring holidays for students in the Division of Dental Hygiene.

18-26 Saturday-Sunday. Spring holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

APRIL

10 Monday. Last day to file *late* application or renewal of application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

Commencement 1978

MAY

14 Sunday. Baccalaureate Service.

17 Wednesday. **Conferral of May degrees and certificates.**

Summer Session

MAY

18 Thursday. Summer session begins for students in the postdoctoral orthodontics program.

29 Monday. **Memorial Day. Holiday for students in all programs.**

JULY

3 Monday.* Registration, including payment of fees, for students in the Division of Dental Hygiene.

4 Tuesday. **Independence Day. Holiday for students in all programs.**

5 Wednesday. Classes begin for students in the Division of Dental Hygiene.

AUGUST

2 Wednesday. Classes end for second-year students in the postdoctoral orthodontics program.

11 Friday. Classes end for students in the Division of Dental Hygiene.

SEPTEMBER

13 Wednesday. Summer session ends for students completing the first year in the postdoctoral orthodontics program.

Autumn Term 1978

AUGUST

1 Tuesday.† Last day to apply or reapply for October degrees and certificates (see September 7).

SEPTEMBER

5-6 Tuesday-Wednesday.* Registration for the academic year, including payment of fees, for D.D.S. degree candidates.

*Students allowed to register after the period specified must pay a late fee.

†Students who apply after this date must pay a late fee.

SEPTEMBER

6 Wednesday.* Registration for the academic year, including payment of fees, for first-year students in the postdoctoral orthodontics program.

6 Wednesday.* Registration, including payment of fees, for students in the Division of Dental Hygiene.

7 Thursday. Last day to file *late* application or renewal of application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

7 Thursday. Classes begin for students in the Division of Dental Hygiene.

7 Thursday. Classes begin for first-year students in the postdoctoral orthodontics program.

11 Monday. Classes begin for D.D.S. degree candidates.

11 Monday. First day to change programs and to apply to audit courses.

13 Wednesday.* Registration for the academic year, including payment of fees, for all students in the postdoctoral programs except for first-year orthodontics students.

14 Thursday. Classes begin for all students in the postdoctoral programs except for first-year orthodontics students.

15 Friday. Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**

OCTOBER

25 Wednesday. Award of October degrees and certificates.

27 Friday. Last day to drop courses for students in the Division of Dental Hygiene.

NOVEMBER

3 Friday.† Last day to apply or reapply for January degrees and certificates (see December 8).

6 Monday. Academic holiday for students in the Division of Dental Hygiene.

7 Tuesday. Election Day. Holiday for students in all programs.

23-26 Thursday-Sunday. Thanksgiving holidays for students in all programs.

DECEMBER

8 Friday. Last day to file *late* application or renewal of application for January degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

16 Saturday, through January 1, 1979, Monday. Winter holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.

22 Friday, through January 18, 1979, Thursday. Winter holidays for students in the Division of Dental Hygiene.

*Students allowed to register after the period specified must pay a late fee.

†Students who apply after this date must pay a late fee.

Spring Term 1979

JANUARY

9 Friday.* Registration, including payment of fees, for students in the Division of Dental Hygiene.

12 Monday. Classes begin for students in the Division of Dental Hygiene.

14 Wednesday. Award of January degrees and certificates.

15 Thursday. First day to change programs and to apply to audit courses.

17 Wednesday. Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**

FEBRUARY

9 Monday. **Washington's Birthday. Holiday for D.D.S. degree candidates and for students in the postdoctoral programs.**

9 Monday.† Last day to apply or reapply for May degrees and certificates (see April 9).

16 Monday. Last day to drop courses for students in all programs.

MARCH

1-18 Sunday-Sunday. **Spring holidays for students in the Division of Dental Hygiene.**

APRIL

1-15 Saturday-Sunday. **Spring holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.**

16 Monday. Last day to file late application or renewal of application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

Commencement 1979

MAY

3 Sunday. Baccalaureate Service.

5 Wednesday. **Conferral of May degrees and certificates.**

Summer Session 1979

MAY

7 Thursday. Summer session begins for students in the postdoctoral orthodontics program.

13 Monday. **Memorial Day. Holiday for students in all programs.**

*Students allowed to register after the period specified must pay a late fee.
Students who apply after this date must pay a late fee.*

JULY

3 Tuesday.* Registration, including payment of fees, for students in the Division of Dental Hygiene.

4 **Wednesday. Independence Day. Holiday for students in all programs.**

5 Thursday. Classes begin for students in the Division of Dental Hygiene.

26 Thursday. Classes end for second-year students in the postdoctoral orthodontics program.

AUGUST

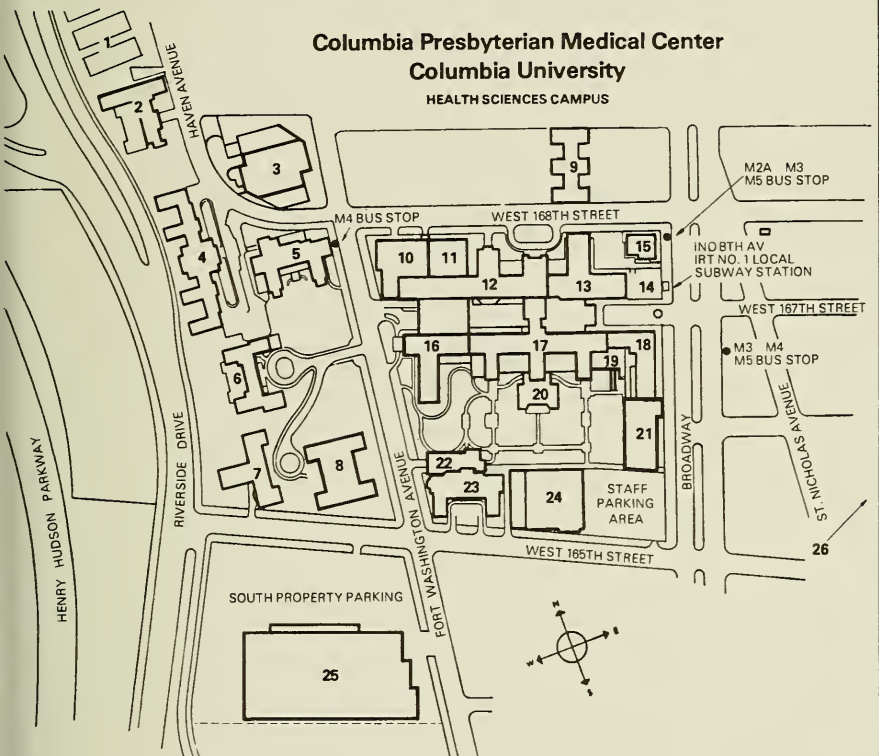
10 Friday. Classes end for students in the Division of Dental Hygiene.

SEPTEMBER

12 Wednesday. Summer session ends for students completing the first year in the postgraduate orthodontics program.

**Students allowed to register after the period specified must pay a late fee.*

**Columbia Presbyterian Medical Center
Columbia University**
HEALTH SCIENCES CAMPUS



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 The Babies Hospital
 Babies Hospital Research,
 Teaching, and Office
 Addition
 Bard Hall Medical Student
 Residence
 Bard Haven Towers
 William Black Medical
 Research Building
 Institute of Cancer
 Research
 Cancer Research Center
 Central Service Building
 College of Physicians and
 Surgeons
 Center for Community
 Health Systems
 School of Dental and Oral
 Surgery

9 Georgian Nurses
 Residence
 22 Edward S. Harkness Eye
 Institute
 23 Eye Institute Research
 Laboratories
 7 Harkness Memorial Hall
 16 Harkness Pavilion
 20 Pauline A. Hartford
 Memorial Chapel
 3 Health Sciences Center-
 Augustus Long Library
 3 Institute of Human
 Nutrition
 2/12 International Institute
 for the Study of Human
 Reproduction
 6 Anna C. Maxwell Hall,
 School of Nursing
 Residence

5 The Neurological Institute
 of New York
 6 School of Nursing
 25 Parking facilities
 17 Presbyterian Hospital
 New York Orthopedic
 Hospital
 Sloane Hospital for
 Women
 Squier Urological Clinic
 4 New York State
 Psychiatric Institute
 4 Psychoanalytic Clinic
 15 School of Public Health
 19 Radiotherapy Center
 13 Vanderbilt Clinic
 14 Vanderbilt Clinic Addition



SCHOOL OF DENTAL AND
ORAL SURGERY

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School of Dental and
Oral Surgery

Columbia University Bulletin

D.D.S. Program

Postdoctoral Programs in Dental Specialties

Dental Hygiene Programs

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GEORGE A. MINERVINI, D.D.S. *Clinical Professor of Dentistry*

MELVIN L. MOSS, D.D.S., Ph.D. *Professor of Oral Biology and Professor of Anatomy*

LETTY MOSS-SALENTIJN, D.D.S., Ph.D. *Associate Professor of Dentistry*

HENRY I. NAHOUM, D.D.S. *Professor of Dentistry*

STEVEN S. SCRIVANI, D.D.S. *Professor of Clinical Dentistry*

JOHN V. TAGGART, M.D. *Professor of Physiology*

ENNIO L. UCCELLANI, D.D.S. *Professor of Dentistry*

DONA E. WAYMAN, Ed.D. *Associate Professor of Dentistry*

DAVID J. ZEGARELLI, D.D.S. *Assistant Professor of Dentistry and of Pathology*

Administrative Staff

IDA EHLE C. ANTOSIK, B.A. *Associate Registrar*

KATHRINE L. BAKER. *Administrative Assistant*

VINCENT C. CLARK, M.H.A. *Administrative Director of Clinics*

ANN M. EMMERICH. *Assistant to the Dean*

MICHAEL J. McGRATH. *Manager of Dental Stores*

Officers Emeriti

CARL R. OMAN. *Professor Emeritus of Dentistry*

SOLOMON N. ROSENSTEIN. *Professor Emeritus of Dentistry*

FRANCES A. STOLL. *Professor Emeritus of Dental Hygiene*

Objectives of the School

The School of Dental and Oral Surgery of Columbia University traces its origins to the year 1852, when the New York State legislature chartered the New York College of Dental Surgery. The College became the School of Dental and Oral Surgery of Columbia University in 1916, when dentistry was recognized as an integral part of the health sciences and dental education as a true university discipline. Many departments of the University contribute to and collaborate in the education of dental, postdoctoral, and dental hygiene students, thereby assuring them a broad foundation for sound professional development. As the guiding educational policy of Columbia University is the constant pursuit of excellence, the primary goal of the School of Dental and Oral Surgery is the preparation of graduates equipped to fulfill their obligations to the individual, to society, and to the profession. Dental education at Columbia has, over the years, provided leadership in the development of dentistry in the United States. Two examples of such leadership are (1) the establishment at Columbia University, in 1920, of the first organization devoted exclusively to research in dentistry; and (2) Professor William J. Geis's major critique of dental education in the United States in 1926, a critique which resulted in the acceptance by dental schools throughout the country of the basic policies and objectives developed at Columbia.

The University, realizing the need for even greater emphasis on the prevention of dental disease, constantly revises the curriculum. The curriculum is designed to increase the student's appreciation of the conceptual basis of dentistry. Adequate preparation for dentistry demands an understanding of broad biological principles integrated with the continually evolving body of scientific information in clinical dentistry and basic dental research. Undergraduate students are exposed to the full spectrum of dental problems as directed observers, and are then introduced to surgical and manipulative procedures and to methods of diagnosis and prevention that they must learn to execute with a high degree of competence. Emphasis is on the close relationship between systemic and oral health and disease, on systemic aberrations that affect the oral structures, on diseases of the mouth which may affect other organ systems, and on oral health as an essential component in total health.

Clinical training is broad in its scope. It is designed to produce competence in the recognition of oral disease and disorder, to stress the essential role of prevention in the control of oral disease, to establish the concept of maintaining the oral structures in optimal health, and to develop skill in planning and treatment.

It is necessary that the curriculum be considered only the initial framework for the student's lifetime participation in dental science and art. To this end, the curriculum cultivates in students those habits of independent thought and scholarship that encourage the continual evaluation of new knowledge. Although learning plays a vital role in the students' lives, their future development and attainment are most effectively assured by fostering a spirit of inquiry. Accordingly, there is a constant application of the scientific method, and undergraduate, postdoctoral, and dental hygiene students are encouraged to participate in research.

Insofar as the population is rapidly increasing, knowledge of the processes of human growth and development and of the prevention of disease and abnormality must be amplified. In other branches of medicine, preventive research has resulted in an extensive reduction in infant and child mortality and in a marked increase in the life span of the individual. In dentistry, prevention of dental and oral disease and disorder must be effected in childhood to enable our youth to reach adulthood with complete, healthy dentitions and socially acceptable speech and expression. Also the increased life span presents many new physiological, pathological, and psychological problems which are peculiar to the aged and are open to investiga-

tion. In addition to undergraduate education, programs in graduate education and research are essential if these challenges to dentistry are to be met. The Faculty of the School of Dental and Oral Surgery regards high standards in both graduate education and research as prime objectives which follow directly from its objectives in undergraduate education.

Foresight on the part of the founders of the School of Dental and Oral Surgery has provided for the education of auxiliary personnel to augment dental health services. The Division of Dental Hygiene was established as a program of courses for dental hygienists in the same year that the School became part of the University. The dental hygiene programs are designed to educate students toward an appreciation of their role in a professional society, toward an awareness of the ways in which their professional activities involve them in a wide range of value judgments, and toward expertise in clinical skills. Candidates are selected on the basis of scholarship, achievement, and an ability to prepare for leadership positions within the profession. The undergraduate programs in dental hygiene focus on fundamental knowledge and provide a base for graduate education. The graduate program extends and deepens knowledge and practice in a particular area of interest. All programs contribute to the preparation of a liberally educated dental hygienist who understands human and social factors, is expert in clinical skills, and can progress toward a significant and satisfying role within the profession.

A dental auxiliary utilization program trains dental students in the efficient use of auxiliaries. This program also explores new opportunities for the use of auxiliary personnel in an attempt to provide additional services to meet the expanding dental health needs of a growing population. In the Dental TEAM Practice Program students participate in a simulated group practice in which they master the principles of office management, including the coordination of the activities of multiple auxiliaries.

The University has realized that to accomplish these objectives requires the selection of students with superior abilities and academic qualifications, acquisition and maintenance of an excellent staff, and constant pursuit of knowledge through an active and diversified research program. Conscious of these needs, the School selects its students with care and maintains small classes, with a favorable ratio of staff to students. This ratio permits individual instruction and a stimulating relationship between student and instructor. The School has had, through the years, a distinguished staff which has demonstrated accomplishment in educational research and professional leadership, and which continues to prepare students for the expanding professional responsibilities of dentistry and the prevention of dental disease.

Programs of Study

D.D.S. Program

The curriculum of the School offers all basic science courses to both dental and medical students in the form of a "core" program. During the first year, the dental student takes all the required basic science subjects except pharmacology and neural science and pathology (second year). Also in the first year, the dental student is required to take three courses: (1) *Interdisciplinary Correlation D4001 D4002—Introduction to dentistry*, in which the student is exposed to the nature of dentistry and its significance, the means of delivery of dental care, and the kinds of preventive and treatment services which modern dentistry provides; (2) an interdisciplinary course in human behavior which deals with the psychological

aspects of patient care; (3) a series of correlation clinics consisting of lectures and demonstrations designed to integrate medical and dental clinical subjects with the basic sciences.

The second year is essentially a "core" dental-science year, providing the full range of courses in oral biology, as well as the conceptual basis for the application of modern methods in the recognition, prevention, and treatment of dental disorders. Clinical observation, small group teaching, and frequent seminars provide the second-year student with a comprehensive view of dentistry. The program also includes integrated courses in dentistry (recognition, prevention, concepts of therapy, instrumentation, and clinical observation), as well as a course in psychosocial aspects of dentistry.

The third year is primarily clinical, with training in all phases of dentistry. Emphasis is on correlation of the various dental disciplines with one another and with the basic sciences. Prevention and comprehensive treatment are stressed while technical laboratory procedures are limited. The third- and fourth-year students function as a group, or module, in a setting similar to that of private practice, where total patient care is rendered by each student and supervision is under an interdisciplinary teaching team. This teaching team is supplied by the professional staff of the divisions of Preventive Dentistry, Periodontics, Operative Dentistry, Prosthodontics, and Endodontics. Consultation services are made available by the divisions of Oral Diagnosis, Oral Surgery, and Orthodontics. The postdoctoral programs of endodontics and periodontics serve the undergraduate clinical modules by treating the difficult cases in their specialty areas.

During the fourth year the opportunity to choose electives in special areas of dentistry is made available. In order to increase their ability to view clinical cases in comprehensive manner, fourth-year students spend time as student preceptors in the clinic and in seminars held in conjunction with underclassmen and the staff. Areas-of-concentration programs in endodontics, orthodontics, orofacial development, pedodontics, periodontics, prosthodontics, research, and public health are offered to selected highly qualified students in their fourth year of study.

As a result of the constantly expanding body of knowledge in basic and dental sciences and the need for adequate clinic time, two summer sessions are required: (1) between the second and third years; (2) between the third and fourth years.

Throughout the entire course an effort is made to interrelate the different phases of dental learning by means of "correlative" and "combined" clinics in which the various departments and divisions cooperate in the discussion and demonstration of the same and related problems and thus treat the study of dentistry as a unit rather than a series of isolated branches of learning. At the same time an attempt is made to individualize instruction and to place responsibility as far as practicable upon the student for his or her own training. This is accomplished by the division of classes into modules and review sessions, and by the comprehensive case method of instruction.

Voluntary participation in research projects of the student's choosing and in programs under the guidance of members of the faculty is earnestly encouraged. Members of the William Jarvie Society for Dental Research, the undergraduate research and honor society, undertake individual and team projects under the direction of members of the faculty. Lectures on the principles and practice of research are provided for the membership. In addition, students assist in the execution of studies being pursued by faculty members. A limited number of student research fellowships are available for summer work under the direction of the staff. The scope of student research includes critical reviews of the literature, critical studies in the techniques of the various disciplines of dentistry, and the evaluation of newer therapeutic agents and dental materials. Work in the basic sciences is encouraged. For a complete description of this program, see *The D.S. Program* below.

Postdoctoral Programs

The School is authorized to grant certificates of training in special branches of dentistry. Study for the certificate of training includes advanced study in the clinical and basic science branches of dentistry approved by the Dean. At present, programs are offered to qualified graduates in dentistry who wish to prepare for specialization in endodontics, orthodontics, pedodontics, and periodontics. These programs are described in detail under *Postdoctoral Programs in Dental Specialties*.

Continuing Education

Consistent with the belief that a lifetime of learning is necessary for continued competence in the health profession and that dental education must be a continuum which extends throughout the professional career, the School of Dental and Oral Surgery offers a program of short courses of varying lengths on diverse subjects.

These continuing education courses are given at irregular times throughout the academic year and are announced by special brochures, notices in journals, and special mailings.

Courses may range in length from one day to one week or may meet weekly for an entire semester. They are designed to enable the practitioner to review and continue his or her educational experience in fields where research and its clinical application present constantly changing concepts of prevention, diagnosis, and treatment. These short courses acquaint the participant with the latest advances in the various fields of dentistry.

A number of specially designated courses among those described under *The D.D.S. Program* and *Postdoctoral Programs in Dental Specialties* are offered for audit as Continuing Education Courses. These courses are available for attendance by nonmatriculated practitioners and other professionals through the Division of Continuing Education and are described in the periodic Continuing Education brochure and announcements. They are identified in this bulletin by an asterisk following the course title.

Inquiries concerning Continuing Education courses, schedules, and fees should be directed to the Director of Continuing Education, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, New York 10032. Telephone (212) 694-3865.

For Visitors and Visiting Scholars to the School of Dental and Oral Surgery

Qualified students are offered the opportunity for guided study, attendance, and observation of clinical and classroom education under the direction of a faculty member for variable periods of the school year not necessarily corresponding to regular academic intervals. Faculty members of other institutions may be granted visiting scholar privileges, which include auditing clinic and classroom courses (as approved by the course instructor), attending lectures, and participating (with the approval of the appropriate faculty member) in seminars.

This course is offered without credit. A special fee is determined after consultation with the Director of Continuing Education, depending on the courses to be audited and the length of time to be spent in attendance. No official records of attendance are kept, and no transcript certifying attendance or work undertaken is provided by the registrar.

Arrangements for enrollment are made directly with the Director of Continuing Education at the address above.

Programs for Dental Hygienists

Columbia offers a bachelor's and a master's degree in dental hygiene. Candidates for the Bachelor of Science degree under the classification of Program A (for the student with two years of college credit) are admitted only in September; candidates for the Bachelor of Science degree under the classification of Program B (for the student with two years of dental hygiene college credit) are admitted in September, January, or July. The program for the M.S. degree provides advanced education in dental hygiene administration, research, and teaching. Please consult *The Dental Hygiene Programs* for details of the programs.

Graduate Courses in the Basic Sciences

A limited number of fellowships are available to graduates of accredited dental schools. These fellowships offer opportunity for study in the following basic-science departments of the University: anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. For further information, address the Dean, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032.

Courses Leading to the Degree of Doctor of Philosophy

Graduation from accredited dental schools under the present curriculum of four academic years preceded by three acceptable predental college years is considered by the Graduate School of Arts and Sciences of Columbia University to meet the general requirements for admission. There are additional admission requirements in certain departments. A student who is accepted by the Graduate School as a candidate for the degree of Doctor of Philosophy and who holds the Doctor of Dental Surgery degree from Columbia University may, with the consent of the Dean, offer the work done for the professional degree in lieu of points toward the fulfillment of the residence requirement for the academic degree. For further information see the bulletin of the Graduate School of Arts and Sciences, which can be obtained by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

Public Health for Dentists

A one-year course leading to a Master of Public Health degree is offered by the School of Public Health. The course is open to graduate students in dentistry. For further information regarding course content, registration, and fees, apply to the Director, School of Public Health, Columbia University, 600 West 168th Street, New York, N.Y. 10032.

A joint D.D.S./M.P.H. program is offered. For further information consult the Associate Dean for Academic Affairs, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032.

Facilities

The Dental Clinic

The School benefits in many ways through its association with the Medical Center. One of the functions of its clinic is the dental care of patients in the Center

hospitals. Students are given a unique opportunity to gain experience in the diagnosis and care of those cases where a relationship exists between oral and general systemic diseases. The student also learns at first hand the problems of providing dental care for the hospitalized patient. The wards and outpatient departments of the Center give close contact and association with all branches of the health services.

The New Dental School Teaching Center

The School of Dental and Oral Surgery has undergone a complete renovation. A modern dental teaching center with expanded facilities for faculty, students, and patients was completed in the autumn of 1977. The new facility permits an increase in class size and provides totally integrated clinics for use by undergraduate dental students, postdoctoral dental students, and dental hygiene students.

The Library

The Columbia University Health Sciences Library is housed in the new Health Sciences Center-Augustus Long Library. This eighteen-story, multimillion-dollar tower was completed in 1976 and provides a modern and efficient environment for study, teaching, and research. The four floors occupied by the library offer a comfortable atmosphere conducive to study, including such amenities as individual study carrels, group study and conference rooms, typing rooms, and a leisure reading lounge.

With more than 335,000 volumes and a staff of thirty-four, the Health Sciences Library is one of the largest medical center libraries in the United States. It is well able to serve the needs of faculty, students, and researchers in the health science disciplines. More than 3,000 periodicals are received regularly. An entire floor of the library has been designated as a media center and is equipped with a variety of audiovisual materials. In addition to traditional reference services, the library offers computerized literature searching on several data bases, including MEDLARS. A library handbook and other materials describing library services are available on request.

Other Columbia libraries, located on the Morningside campus, are open to all students and faculty who carry Columbia identification cards. The main collection is housed in Butler Library; special and departmental collections are housed in other buildings on the campus.

Statement of Nondiscriminatory Policies

Columbia University admits students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, national and ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

Consistent with the requirements of Title IX of the Education Amendments of 1972, as amended, and Part 86 of 45 C.F.R. (to which Columbia University is subject), the University does not discriminate on the basis of sex in the conduct or operation of its education programs or activities (including employment therein and admission thereto). Inquiries concerning the application of Title IX and Part 86 of 45 C.F.R. may be referred to the University's Equal Opportunity Office (402 Low Memorial Library, New York, N.Y. 10027, telephone 212-280-3554), or to

the Director, Office for Civil Rights (Region II), 26 Federal Plaza, New York, N.Y. 10007.

Consistent with the requirements of Section 504 of the Rehabilitation Act of 1973, as amended, and Part 84 of 45 C.F.R., the University does not discriminate on the basis of handicap in admission or access to, or employment in, its programs and activities. The University's Equal Opportunity Office has also been designated to coordinate the University's compliance with the Rehabilitation Act of 1973 and Part 84 of 45 C.F.R.

Key to Course Listings

Each course number of the School of Dental and Oral Surgery consists of a capital letter followed by four digits and the term designation.

The *capital letter* indicates the School of Dental and Oral Surgery.

The level of the course is represented by the *first digit*:

- 3 Dental hygiene undergraduate course
- 5 First-year course for D.D.S. degree candidates
- 6 Second-year course for D.D.S. degree candidates; dental hygiene graduate course
- 7 Third-year course for D.D.S. degree candidates
- 8 Fourth-year course for D.D.S. degree candidates
- 9 Postdoctoral course

D.D.S. Degree Program

In the D.D.S. degree program, the *second and third digits* indicate the subject area:

- 00—04 Interdisciplinary correlation
- 05—09 Preventive dentistry
- 10—14 Community health
- 15—19 Dental auxiliary utilization
- 20—29 Endodontics
- 30—34 Operative dentistry
- 35—39 Oral biology
- 40—44 Oral surgery
- 45—49 Orofacial growth and development
- 50—59 Orthodontics
- 60—69 Pedodontics
- 70—79 Periodontics
- 80—84 Prosthodontics
- 85—89 Behavioral science
- 90—99 Stomatology

Postdoctoral Programs

In the postdoctoral programs, the *second digit* indicates the course category:

- 0 Interdisciplinary correlation
- 2 Endodontics
- 5 Orthodontics
- 6 Pedodontics
- 7 Periodontics
- 9 Dental science (core and interdepartmental courses)

Dental Hygiene Programs

In Program A, the subject area is indicated by *the second digit*:

- 0 Basic science
- 1 Dental science
- 2 Education
- 3 Public health
- 4 Clinical dental hygiene

In Program B, the subject area is indicated by *the second and third digits*:

- 52 Dental science
- 54 Education
- 56 Public health
- 58 Clinical dental hygiene

Points of Course Credit: The number of points of credit that a course carries is given in boldface type in the right margin of the course-title line.

Term Designations: X, Y, Z

An x following the course number indicates the course meets in the autumn term; a y indicates the spring term; and a z indicates the summer session.

Courses for Audit

An * following the course title indicates that a course is available for audit as described in the section *Continuing Education*.

The D.D.S. Program

Admission Requirements

Summary of the D.D.S. Program

Courses of Instruction

Admission Requirements

Candidates may apply after July 1 during the academic year preceding that for which they seek admission; the deadline for receipt of applications is December 1. Application is made through the American Association of Dental Schools Application Service (AADSAS). Application forms for this service can be obtained from the Office of Admissions, from any other participating dental school, or directly from AADSAS, 1625 Massachusetts Avenue N.W., Washington, D.C. 20036, telephone toll-free: (800) 424-2474.

Upon request by the Admissions Office, the applicant must send a check or money order for \$35, made payable to Columbia University, directly to the School of Dental and Oral Surgery. This fee, which covers the cost of processing the application, is required of all prospective students. Those wishing to be considered for a fee waiver should consult with the Office of Admissions and must supply the information necessary to support the waiver request. An application for admission will not be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the School. The fee is not refundable and is not credited toward tuition.

Required preparation: the bachelor's degree from an accredited American institution or its equivalent including the following courses (8 points of each): English composition and literature, physics, biology, inorganic chemistry, and organic chemistry. It is not necessary to complete the academic requirements before applying, but all requirements must be completed before registration. Students are discouraged from applying if they will only have three years of college, as preference is given to applicants with bachelor's degrees.

Recommended preparation: additional courses in chemistry; advanced courses in biology; courses in mathematics, foreign languages, sociology, history, and the fine and industrial arts. The admission of a student depends primarily on preparation and intellectual capacity, but it also depends upon judgments of the student's character.

Interviews: A personal interview is required for admission. Due to the large number of applicants, the interview is by invitation only from the Committee on Admissions. Candidates who are chosen for an interview will be notified by mail, and those applicants living on the West Coast will have the option of being interviewed in California. Further instructions will be given to those candidates by the Office of Admissions.

Dental Aptitude Tests: All applicants must take the Dental Aptitude Tests, which are conducted by the Council on Dental Education at various testing centers throughout the United States and Canada, no later than October of the year during which application is made. For further information, apply directly to the Division of Educational Measurements, Council on Dental Education of the American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

Acceptance Fee: After receiving notice of acceptance, the applicant must notify the Committee on Admissions that he or she intends to enroll according to instructions specified in the letter of acceptance. The acceptance fee is applied to the applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.

Combined Programs

With Barnard College. Under the "professional option" plan, students from Barnard College may receive the Bachelor of Arts degree from Barnard after the completion of three years of undergraduate work at Barnard and the first year in the School of Dental and Oral Surgery. To be eligible for this privilege, before entering the School the student must have completed 90 points of academic work at Barnard (including all specific requirements), a major of 28 points, and the major examination or thesis.

With the School of General Studies. Students from the School of General Studies may exercise the professional option after the completion of 94 points (including all courses prescribed for the Bachelor of Science degree), not less than 64 of which must have been taken at Columbia University. For further information students should consult with the School of General Studies Office of Admissions 509 Lewisohn Hall on the Morningside Campus.

Admission with Advanced Standing

Applications for admission with advanced standing will be accepted whenever vacancies exist in the third- and fourth-year classes. Only those applicants who will have *successfully* completed two or three years of study in an *accredited* dental school and who have passed Part I of the National Dental Board examination need apply. Graduates of foreign dental schools who hold dental degrees equivalent to the D.D.S. or D.M.D. may be considered for admission on an ad hoc basis. Evidence of having passed Part I and Part II of the National Dental Board Examination is required.

Summary of the D.D.S. Program

Because of revisions in curriculum, the following outline reflects the tentative program for the years 1979-1981.

First Year

Anatomy 101F, 102F-102S
 Behavioral science D5851
 Biochemistry 101F
 Embryology 101F-102S
 Interdisciplinary correlations D5002

Microbiology 101F
 Nutrition 101F
 Orofacial development D5450-D5451
 Pathology 101S
 Physiology 101S

Second Year

Behavioral science D6851
 Community health D6101
 Endodontics D6201
 Interdisciplinary correlations D6010
 Microbiology 102S
 Neural science 206F
 Operative dentistry D6300-D6301
 Oral biology D6351, D6361,
 D6371-D6372
 Oral surgery D6401, D6402

Orofacial development D6452, .
 D6453, D6454
 Orthodontics D6501
 Pedodontics D6651
 Periodontics D6701
 Pharmacology 250F-251S
 Preventive dentistry D6051, D6052
 Prosthodontics D6800-D6801
 Stomatology D6902

Third Year

Behavioral science D7851
 Community health D7101, D7102
 Dental auxiliary utilization
 D7150-D7151
 Endodontics D7201-D7202
 Operative dentistry D7301-D7302
 Oral biology D7351, D7361
 Oral surgery D7401-D7402, D7411,
 D7421*

Orthodontics D7501-D7502
 Pedodontics D7651-D7652
 Periodontics D7701-D7702
 Preventive dentistry D7051-D7052
 Prosthodontics D7801-D7802
 Stomatology D7901-D7902,
 D7911-D7912, D7921, D7931,
 D7941-D7942, D7943-D7944

Fourth Year

Community health D8111-D8112*,
 D8121†
 Dental auxiliary utilization
 D8151-D8152†, D8171-D8172†
 Endodontics D8201-D8202,
 D8211-D8212*
 Interdisciplinary correlations
 D8001-D8002*
 Operative dentistry D8301-D8302
 Oral biology D8361-D8362
 Oral surgery D8401†
 Orofacial development
 D8451-D8452†, D8461-D8462*

Orthodontics D8511-D8512*
 Pedodontics D8661-D8662*
 Periodontics D8701-D8702,
 D8711-D8712*
 Preventive dentistry D8051-D8052,
 D8061-D8062*
 Prosthodontics D8801-D8802,
 D8810-D8811*
 Stomatology D8901-D8902†*

*Elective courses

†Not required of students in areas of concentration

*Identical to Stomatology D7901-D7902

Areas of Concentration

Programs are available to qualified fourth-year students in the following areas: biological sciences, endodontics, orofacial development, orthodontics, periodontics, and public health.

Required Summer Clinics

These sessions are held in June and July.

Courses of Instruction

In the following course listings where the name of the subject or area of studies does not appear before the course number it is understood to be the same as the heading preceding each group of courses.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Anatomy

101F. Microscopic anatomy

Professor Gershon and staff. First year.

Lectures, conferences, and laboratory dealing with the analysis of biological structure necessary for understanding the function of cells, tissues, and organs.

102F-102S. Human anatomy

Professor Moss and staff. First year.

Regional dissections of the complete body, augmented by lectures stressing *functional* interpretations. Lectures correlate developmental anatomy with gross anatomy.

Embryology 101F. Developmental anatomy

Professor Moss-Salentijn and staff. First year.

Lectures on selected topics in human developmental anatomy.

Neural Science 206F. Neural science

Professors Kandel, Kelly, and Rowland, and staff. Second year.

An interdisciplinary course designed to provide an integrated background in anatomy, behavior, biochemistry, and physiology of the nervous system.

Behavioral Science

05851x. Human behavior

Professors Wotman, Jewett, and Weiss, and staff. First year.

Small group seminars utilizing common experiences to examine basic aspects of normal human behavior.

06851y. Human behavior

Professors Wotman, Jewett, and Weiss, and staff. Second year.

Small group seminars utilizing common experiences to examine dentist-patient relationships in the school and in a practice environment.

07851y. Behavioral problems in clinical practice

Professors Wotman and Weiss, and staff. Third and fourth years.

A case study course presented as part of the modular practice review. Examines the interpersonal issues in clinical care requiring the student to exercise judgment and determine cause of action.

Biochemistry

001F. Introductory biochemistry

the staff. First year.

A survey of the chemical constituents of the mammalian cell and their metabolic activities; energy production in the cell, and its role in the synthesis of biological macromolecules; biosynthesis of nucleic acids and proteins; regulation of nucleic acid and protein synthesis.

Community Health

D6101x. Epidemiology

The staff. Second year.

Lectures and seminars in epidemiology and its role in disease prevention and community health. Major focus on dental and oral disease.

D7101y. Health care delivery systems and dental practice*

The staff. Third year.

Lectures in organization and financing of health care. Overview of public and private sectors of dental care, with emphasis on third-party insurance, group practice models, peer review and PSRO, manpower, legislation, and projected programs.

D7102y. Extramural program

The staff. Third year.

Students are sent to community health programs to observe and participate in the delivery of dental care under a variety of local settings: neighborhood health centers, county health departments, and other agencies are utilized. Seminars, lectures, and panel discussions supplement experience.

D8111x-D8112y. Public health community dentistry elective

The staff. Fourth year.

Students assigned to various extramural health centers, hospitals, and institutions to provide care, to identify with various types of health care delivery systems, and to increase their social sensitivity to various communities and population groups. Tutorial seminars for selected students from the School of Public Health, and for students enrolled in the DDS/MPH program, the M.S. degree program in the Division of Dental Hygiene, and senior dental students.

D8121y. Ethics, jurisprudence, and forensic dentistry*

The staff. Fourth year.

An overview of the laws and regulations governing dental practice, professional responsibility, controls, practice agreements, and the role of forensic dentistry in modern dental practice.

Dental Auxiliary Utilization

D7150x-D7151y. D.A.U.

Professor D. Kaplan and staff. Third year.

Lectures, demonstrations, and clinical experience in four-handed, sit-down dental service delivery; the effective utilization of chairside dental assistants; patient and dental team positioning; sequential instrumentation; equipment and space criteria.

D8151x-D8152y. D.A.U.

Professor D. Kaplan and staff. Fourth year.

Lectures and office visits present an introduction to dental practice management, the various systems of private practice, and dental economics. This section of the course prepares the student in the essentials of establishing, managing, and maintaining a dental practice.

D8171x-D8172y. T.E.A.M.

Professor Tolpin and staff. Fourth year.

Lectures, seminars, and clinical experience in the principles and practices of management of expanded function auxiliaries.

Endodontics

D6201y. Endodontics theory and technique

Professors Moreinis, Leavitt, and Naidorf, and staff. Second year.

Lectures and seminars on the fundamentals of endodontics. Demonstrations and exercises in endodontic technique on extracted teeth.

D7201x-D7202y. Basic clinical endodontics
Professors Moreinis and Leavitt, and staff. Third year.
 Demonstrations and clinical experience in the practice of endodontics.

D8201x-D8202y. Advanced clinical practice
Professors Moreinis and Leavitt, and staff. Fourth year.
 Lectures and clinical experience in advanced problems in endodontic theory and technique.

D8211x-D8212y. Endodontics elective
Professor Greenfield and staff. Fourth year.
 Seminars, demonstrations, and clinical experience in advanced endodontic theory and technique.

Interdisciplinary Correlation

D5002y. Introduction to dentistry
Professor Halpert and staff. First year.
 Lectures, demonstrations, clinical observation, and experience designed to define the scope of dentistry early in the career of the dental student. Correlation between the preclinical and clinical disciplines is an integral part of the course content.

D6010y. Introduction to clinical practice
Professors R. Goldman, Scrivani, and Uccellani. Second year.
 Introductory seminars preparing the student for clinical experience.

D8001x-D8002y. Individualized elective
The staff. Fourth year.
 An elective program designed to meet the needs of the student in an area appropriate to his/her educational goals as arranged by the Third Year Class Committee.

Microbiology

D01F. General microbiology
The staff. First year.
 References.

D02S. Pathogenic organisms
The staff. Second year.
 References.

Nutrition

D01F. Introduction to nutrition
Professor Winick and staff. First year.
 Lectures covering nutrient deficiencies, nutrient excess, nutrition during special periods of life, and foods in general and therapeutic diets. *Nine one-hour lectures and nine two-hour lectures.*

Operative Dentistry

D6300x-D6301y. Introductory operative dentistry
Professors Cain, Brzustowicz, and Boelstler, and staff. Second year.
 Lectures and laboratory exercises on the fundamentals of operative dentistry, including the biology of dental caries and the biological approach to the technical procedures in the restoration of teeth. Periods of clinical observation are an integral part of the course.

D7301x-D7302y. Operative clinical practice

Professors Cain, Brzustowicz, Scrivani, Boyd, and Boelstler and staff. Third year.

Introduction to the clinical practice of operative dentistry. Lectures, demonstrations, and clinical experience in the recognition of disease and related conditions. Prevention treatment planning, and restoration to form and function on a comprehensive care basis.

D8301x-D8302y. Advanced clinical practice

Professors Boyd, Cain, Boelstler, Brzustowicz, and Scrivani and staff. Fourth year.

A continuation of *Operative Dentistry D7301-D7302*, with the addition of seminars in the special problems of operative dentistry, with emphasis on total patient care.

Oral Biology

D6351x. Biology of the oral tissues*

Professor Ellison and staff. Second year.

Lecture and seminars intended to supplement the more general information and concepts of the first-year basic science courses with specific material related to dentistry. Topics include the biochemical nature of the oral tissues and secretions, neuromuscular mechanisms involved in mastication, deglutition, and speech; special sensation; pain; oral and pulpal microcirculation, and bone physiology.

D6361x. Oral microscopic anatomy and embryology

Professor Moss-Salentijn and staff. Second year.

Lectures, conferences, and laboratory on the detailed microscopic anatomy and development of the dental and associated orofacial structures.

D6371x-D6372y. Oral pathology

Professor Blake and staff. Second year.

Lectures, demonstrations, conferences, and laboratory work on diseases of the jaws, teeth and soft tissues about the oral cavity. Emphasis on clinical manifestations of the various diseases.

D7351y. Functional anatomy of the head and neck*

Professor Loscalzo. Third year.

A concise review of the functional interrelationships in this region and their dynamic significance. Pertinent clinical topics are analyzed.

D7361y. Facial pain

Professor Marbach. Third year.

Lectures and clinical demonstrations on the diagnosis and treatment of diseases and disorders associated with pain of non-odontogenic origin. Discussion of basic pain mechanisms.

D8361y-D8362y. Facial pain elective

Professor Marbach. Fourth year.

Oral Surgery

D6401x. Pain control

Professors Jaffe and Marder, and staff. Second year.

Lectures in the understanding of pain and its control by means of local anesthesia. Emphasis will be placed upon the anatomy, physiology, and pharmacology of local anesthesia.

D6402y. Introduction to oral surgery

Professors L. Mandel, Minervini, and Baurmash, and staff. Second year.

Lectures and clinical experience to prepare students for basic oral surgery procedures. The armamentarium, techniques, and complications of exodontia are stressed.

7401x-D7402y. Basic oral surgery
Professors L. Mandel, Minervini, Loscalzo, and Baurmash, and staff. Third year.

Features and clinical experience in operative procedures other than exodontia that would be performed in an ambulatory oral surgery setting.

7411x. Pain control
Professors Jaffe and Marder. Third year.

Features, demonstrations, and practical application of pain control utilizing various modalities of sedation, analgesia, and general anesthesia.

7421y. Summer externship elective
Faculty staff. Third year.

Externships of varying length are offered on a voluntary basis during the summer at selected metropolitan hospitals. The student has the opportunity to become involved with all aspects of dentistry as delivered in a hospital environment.

7415x-D8416y. Oral surgery elective
Professors L. Mandel and Minervini, and staff. Fourth year.

Elective course for a limited number of students. An integrated program of advanced clinical and didactic training and experience in oral surgery. Students rotate through the School's oral surgery clinic and the oral surgery services of selected metropolitan hospitals. Seminars in otolaryngology, salivary gland diseases, and the temporomandibular joint.

7401y. Extramural clinical clerkship
Faculty staff. Fourth year.

Two-week assignment of students to remote site delivery settings, i.e., metropolitan hospitals, to increase the student's consciousness of dental manpower needs and opportunities in underserved communities and population groups. To provide an effective clinical experience in the general practice of dentistry at a facility other than the formal school surroundings.

Orofacial Development

7450x-D5451y. Oral anatomy and occlusion
Professors Lighter and Horowitz, and staff. First year.

Features and laboratory sessions in oral anatomy, dental morphology, phylogeny of the dentition, and dental occlusion.

7452x. Orofacial growth and development
Professor Horowitz. Second year.

Features in patterns of human development with emphasis on facial growth, the timing and sequence of eruption, phylogeny of the dentition, and the development of dental occlusion.

7453x. Human genetics in dentistry
Professor Horowitz and staff. Second year.

Features designed to familiarize the student with principles of Mendelian heredity, cell division, inborn errors of metabolism, chromosomal anomalies, and the genetics of orofacial dysmorphism.

7454x. Statistics
Faculty staff. Second year.

Features and programmed instruction in basic biostatistics, including measures of central tendency, regression, correlation, Chi-Square, and comparison of samples.

7451x-D8452y. Treatment of the handicapped program
Professor Horowitz and staff. Fourth year.

Features and clinical experience in treating patients who have various types of handicapping conditions.

D8461x-D8462y. Orofacial development elective
Professor Horowitz and staff. Fourth year.

An individualized study program in child development, with special emphasis on growth patterns of the dentofacial complex. The child development laboratory provides opportunity for student experience in research design, exploration of genetic factors, dental anomalies and disease, practical applications of statistical analytic techniques, and clinical observation of various craniofacial birth defect syndromes.

Orthodontics

D6501y-D7501x-D7502y. Principles of orthodontics
Professor Di Salvo and staff. Second and third years.

Lectures, seminars, laboratory, and clinic. Orthodontic fundamentals, with special emphasis on prevention and interception of malocclusion by the early recognition and correction of predisposing factors. Appliances used in preventive, interceptive and minor corrective orthodontic procedures are constructed in the laboratory and used in the clinic.

D8511x-D8512y. Orthodontic elective

Professor Di Salvo and staff. Fourth year.

Seminars and clinic participation. A more detailed exposure to the etiology, diagnosis, case analysis, treatment planning, and clinical management of problems of malocclusion.

Pathology

101S. General pathology

Professors Blanc, Branwood, Duffy, Godman, King, Lane, Lattes, Pirani, Richart, and Vogel. First and second years.

The same course as that given to medical students, including lectures, seminars, and laboratories, with emphasis on gross and microscopic examination of tissues, correlated with clinical findings.

Pedodontics

D6651y. Fundamentals of pedodontics and preventive dentistry
Professor Davis and staff. Second year.

Lectures on morphology of the primary tooth cavity preparation, stainless steel crown preparation, and clinical procedure. The preclinical lab involves operative procedures on primary teeth and the fabrication of a band and loop appliance, matrix band construction, amalgam placement and finishing.

D7651x-D7652y. Theory of pedodontics

Professor Davis and staff. Third year.

Lectures and clinical training in treatment planning. Complete dental care for children, including patient management of traumatized teeth, acid etch techniques, space maintainers, simplified tooth movement procedures, and preventive dentistry measures.

D8661x-D8662y. Pedodontic elective

Professors Rocco and Metcalf. Fourth year.

Clinical practice in dentistry for children with more complex management problems than those seen in the third year. Assignments to special clinic for training with special outpatients. Seminars for case presentation and discussion of advanced pedodontic problems.

Periodontics

D701y. Lectures and clinic

Professors Gottsegen and Schwartz, and staff. Second year.

Lectures and seminars in the diagnosis, etiology, and treatment of periodontal diseases. Clinical practice in examination and documentation of clinical findings in the periodontal patient; prophylaxis, subgingival scaling and root planing; teaching and motivating patients to perform personal oral hygiene. The fundamentals of preventive periodontics are covered.

D701x-D7702y. Clinical practice of periodontics

Professors Gottsegen and Schwartz, and staff. Third year.

Lectures and seminars on periodontal surgery, occlusal traumatism, occlusal adjustment, specific periodontal diseases and infections, systemic background factors and interrelationships, methods of temporary stabilization of teeth, introduction to treatment planning, and case presentation both in seminar and clinic. Clinical practice in subgingival curettage, simple surgical techniques, occlusal adjustment by selective grinding, and temporary stabilization.

D701x-D8702y. Advanced periodontics

Professors Gottsegen and Schwartz, and staff. Fourth year.

Clinical experience is a continuation of *Periodontics D7702*. Lectures and seminars tracing the historical development of treatment methods, advanced surgical techniques, special therapeutic problems, fixed and permanent splinting and restorative dentistry for the periodontally involved dentition. A review of periodontal histopathology and physiology related to clinical experience; treatment planning, case management, and case presentation. Emphasis on the clinical management of more complex cases than in the third year.

D711x-D8712y. Periodontics elective

Professors Gottsegen and Lubarr, and staff. Fourth year.

A seminar and choice of one or two clinic sessions a week. Students participate in seminars with subject material researched through literature review and critical analysis. Clinical experience is directed toward enlarging and enhancing the usual four-year periodontics program through the assignment of difficult and complex cases of diagnosis, treatment planning, and therapeutic management. Opportunity and encouragement given for research.

Pharmacology

DF-251S. Introduction to pharmacology

Professors Gottsegen and Lubarr, and staff. Second year.

A rigorous course which features lectures, laboratories, and discussions dealing with additional drugs used in dental and medical practice, as well as newer agents. A thorough understanding of the material presented in this course will add interest to the student's dental practice and will help the student to render a more effective service to patients.

Physiology

DF-251S. Human physiology

Professor Nocenti and staff. First year.

Lectures, conferences, demonstrations, and laboratory. The function of the various organs and systems of the mammalian body and their interrelations.

Preventive Dentistry

D6051x. Scope of preventive dentistry

Professor I. D. Mandel and staff. Second year.

Lectures and seminars on etiology, histopathology, measurement and prevention of plaque diseases—caries and periodontal disease, and on interrelationships between prevention and all areas of dentistry.

D6052y. Techniques of preventive dentistry

Professors R. Goldman and R. Stuchell, and staff. Second year.

Lectures, seminars, and clinical exercises on the procedures of preventive dentistry.

D7051x-D7052y. Practice of clinical preventive dentistry

Professors R. Goldman and Stuchell, and staff. Third year.

Clinical training in the procedures of preventive dentistry with emphasis on the plaque diseases.

D8051x-D8052y. Practice of clinical preventive dentistry

Professors R. Goldman and Stuchell, and staff. Fourth year.

Integrating preventive dentistry into total patient care.

D8061x-D8062y. Preventive dentistry research elective

Professor I. D. Mandel and staff. Fourth year.

Seminars and research project.

Prosthodontics

D6800x-D6801y. Preclinical prosthodontics

Professors Morea and Vero, and staff. Second year.

Lectures and demonstrations on theory and procedures in the fabrication of fixed, removable, and complete prostheses. Wherever necessary for the learning of manipulative skills in preparation for clinical objectives, procedures are carried out on models in the laboratory by the student.

D7801x-D7802y. Core clinical prosthodontics

Professor Lucca and staff. Third year.

Lectures, demonstrations, and clinical experience in the biological principles and practice of the more simple cases in all phases of prosthodontics—fixed and removable dentures.

D8801x-D8802y. Advanced prosthodontics

Professor Lucca and staff. Fourth year.

Lectures, demonstrations, seminars, and advanced clinical experience in the biological principles and practice of fixed and removable dentures. Lectures on different concepts of occlusion and other schools of thought on various aspects of prosthodontics including maxillofacial prosthesis are given by the staff and guest lecturers.

D8810x-D8811y. Prosthodontic elective

Professor Lucca and staff. Fourth year.

Lectures, demonstrations, seminars, and clinical experience in cases presenting unusual clinical problems. Emphasis on developing skills with techniques which are not emphasized in the general prosthodontic courses.

Area of concentration prosthodontics

Professors Grayson and Widrow, and staff.

In this program, selected students spend 80 percent of their time in prosthodontics. Selected core graduate courses are taken as well as participation in lectures and seminars in prosthodontics. Clinical experience is directed toward knowledge in depth in prosthodontics, i.e., extensive and complicated cases. Each student is expected to work on a research project.

stomatology

6902y. Diagnosis and radiology lectures

Professor Donovan. Second year.

Lectures and discussions on history, physics, and electronics of radiology; studies on microbiology, radiotherapy, radiation hazards, and protections; radiographic techniques and processing. Fundamentals of radiographic interpretation; diagnosis of pulpal diseases and associated abnormalities.

7901x-D7902y. Clinical stomatology conferences

Professor E. V. Zegarelli, and stomatology staff. Third year.

These weekly conferences consist of the presentation of case histories having interesting and diagnostically challenging diseases of the mouth and jaws. The diagnosis and treatment of each case are discussed by and with the audience, the latter including undergraduate dental students, dental hygiene students, postgraduate students, residents, practitioners, and faculty. *Weekly one-hour conferences (16).*

7911x-D7912y. Diagnosis lectures and clinic

Professor D. J. Zegarelli and staff. Third year.

Lectures on diagnostic methods and techniques, diseases of the jaws, and diseases of the soft tissues. Clinical experience in mouth examination, history taking, diagnosis of soft and hard tissue diseases, and treatment planning.

7921y. Clinical cancer training

Professor Kutscher and staff. Third year.

Lectures and clinical experience in the diagnosis and treatment of tumors of the head, face, and neck. The student is rotated for one week through the otolaryngology, radiotherapy, dermatology, and maxillofacial prosthesis clinics. Operating room experience in the surgical management of tumors is included.

7931y. Radiology clinic

Professors D. J. Zegarelli and Donovan and staff. Third year.

Clinical practice in intraoral and extraoral radiography; demonstrations of temporomandibular joint panoramic and laminographic techniques.

7941x-D7942y. General survey of medicine*

the staff. Third year.

Selected important aspects of internal medicine, with reference to fundamentals as well as to recent diagnostic and therapeutic advances. Particular emphasis on overall medical problems and their implications for dentistry.

7943x-D7944y. Oral medicine

Professor M. Marder and staff. Third year.

Lectures on the management and treatment of selected diseases of the mouth and jaws, including choice of drugs, models of administration, contraindications, and side reactions. The systemic implications of orodental therapy, the dental management of systemically ill patients, and other medicodental relationships are emphasized.

7901x-D8902y. Clinical stomatology conferences

Fourth year.

The same course as *Stomatology D7901-D7902*.

Postdoctoral Programs in Dental Specialties

Admission Requirements

Summary of Programs

Courses of Instruction

Fellowship and Postdoctoral
Programs in Basic Sciences

Admission Requirements

to be admitted to any program, an applicant must be licensed to practice dentistry. Foreign students may be required to demonstrate sufficient knowledge of English and to pass a clinical competence examination. It is strongly suggested that all students who have received their dental education at schools outside of the U.S.A., Canada, and England submit scores of achievement in the "Test of English as a Foreign Language" (TOEFL) examination as a part of their application.

When to apply: before January 1, for admission in the following September. The Postdoctoral Admissions Committee gives preference to applicants who present evidence of one of the following qualifications: (a) two years of experience in dental practice (service as a dental officer in the federal services fulfills this qualification); (b) completion of an internship of twelve months or more; or (c) completion of at least twelve months of university graduate or postgraduate work in dentistry, a basic science, or an allied field.

Admission procedure: use the application form attached to this bulletin or write to the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 188th Street, New York, N.Y. 10032, for an application form, which must be filled out and returned. The completed form should be accompanied by the application fee of \$35. This fee is required of all prospective students. Payment may be waived, but only in certain individual cases of extreme hardship. Those wishing to be considered for a fee waiver on this basis should consult with the Postdoctoral Admissions Committee and should supply the information necessary to support the waiver request. An application for admission cannot be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the School. The fee is not refundable and is not credited toward tuition. As requested in the form, the applicant should ask each of the colleges or universities attended—for both preprofessional and professional studies—to send official transcripts of the record direct to the director of the postgraduate division in which the applicant is seeking admission. Official proof of current licensure should also be submitted.

Personal interview: if practicable, the Postdoctoral Admissions Committee may ask an applicant to come to the School for a personal interview.

Acceptance fee: within two weeks after receiving notice of acceptance, the applicant must notify the Committee that he or she intends to enroll and must send a check or money order for \$500 made payable to Columbia University. The acceptance fee is credited to the applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.

Summary of Postdoctoral Programs

These programs lead to a board-qualifying certificate of training and are based on the need for specially qualified practitioners of dentistry. They provide opportunities for advanced study in special fields. The education received may be credited toward specialization.

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time.

Program in Endodontics

A two-year, full-time program designed to prepare dentists for specialized practice in endodontics. Included are lectures, seminars, and laboratory courses in the basic sciences as well as in endodontics and related areas of dentistry. Clinic demonstrations, instruction, and experience in all phases of operative endodontics—conservative and surgical—are provided. Participants also receive experience in undergraduate endodontic teaching and in research.

Complete descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn Term

- D9900 Research methodology
- D9200 Theory and practice of endodontics
- D9204 Endodontic anatomy and technic
- D9205 Clinical practice in endodontics
- D9210 Review of endodontic literature
- D9905 Oral medicine and clinical oral pathology
- D9911 Functional anatomy of the head and neck (*alternate years*)
- D9913 Radiology
- D9217 Surgical endodontics
- D9223 Controversies
- D9915 Psychiatry and psychosomatic medicine, and their interrelationship with dentistry
- D9951 Periodontal wound healing seminars
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9965 Bacteriology
- Guest lecture series

Spring Term

D9201, D9206, D9211, D9906, D9218, D9224, and D9228 are offered in the spring term of the first year. They are continuations of courses offered in the autumn term.

- D9901 Cariology
- D9908 Clinical stomatology conferences
- D9912 Anatomy of the head and neck

- D9215 Endodontic-periodontic relationships
 D9914 Theory and practice of periodontics
 D9923 Pharmacotherapeutics (*alternate years*)

Summer Session

- Endodontics D9209 Clinical practice in endodontics

Second Year

Autumn Term

D9202, D9207, D9212, D9219, and D9229 are offered in the second year. They are continuations of courses offered in the first year.

- D9216 Pulp biology
 D9221 Thesis

Spring Term

D9203, D9208, D9213, D9220, D9222, D9226, and D9230 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9910 Clinical stomatology conferences
 D9952 Periodontal wound healing seminars
 D9923 Pharmacotherapeutics (*alternate years*)

Program in Orthodontics

A two-year, full-time program designed to prepare dentists for specialization in orthodontics. Instruction in the basic and applied sciences, in related medical subjects, and in the theory and practice of orthodontics is provided by lectures, seminars, laboratory exercises, and clinical practice. Emphasis is on diagnostic procedures and treatment planning and the application of clinical methods best designed to meet the treatment objectives for the individual patient.

Instruction includes the theory and practice of treatment with various appliances: removable, labiolingual, twinwire, extraoral forces, edgewise, and the Begg Appliance. Satisfactory completion of clinical training under the direction of members of the orthodontic staff is required.

See the Academic Calendar for registration dates and for dates on which classes begin.

Complete descriptions of the following courses are given on pages under *Courses of Instruction*, below.

First Year

Autumn Term

- D9900 Research methodology
 D9956 Introduction to orthodontics
 D9500 Orthodontic technic
 D9501 Clinical orthodontic practice
 D9515 Orthodontic literature review
 D9507 Biomechanics
 D9957 Cephalometrics, growth and development

- D9958 Orthodontic diagnosis and treatment planning
- D9521 Theory and practice of orthodontics
- D9511 Dental anthropology and evolution
- D9911 Functional anatomy of the head and neck
- D9913 Radiology
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9519 Dental materials

Spring Term

D9502, D9516, D9522, and D9959 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9901 Cariology
- D9903 Orofacial growth and development
- D9525 Thesis
- D9912 Anatomy of the head and neck
- D9914 Theory and practice of periodontics
- D9919 Genetics

Summer Session

D9503 and D9526 are offered in the summer session. They are continuations of courses offered in the spring term.

Second Year

Autumn Term

D9527 is offered in the autumn term and is a continuation of a course offered in the summer session.

- D9904 Craniofacial anomalies
- D9504 Clinical orthodontic practice
- D9517 Orthodontic literature review
- D9916 Temporomandibular joint disorders
- D9917 Temporomandibular joint dysfunction and myofascial pain dysfunction problems
- D9523 Theory and practice of orthodontics
- D9509 Orthodontic diagnosis and treatment planning
- D9905 Oral medicine and clinical oral pathology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationships with dentistry

Spring Term

D9505, D9510, D9518, D9524, D9528, D9906, and D9918 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9902 Pediatrics related to dentistry
- D9508 Practice management in orthodontics
- D9513 Public health aspects of orthodontics
- D9514 Oral and maxillofacial surgery related to orthodontics
- D9910 Clinical stomatology conferences

- D9961 Maxillofacial follow-up clinic
- D9955 Speech pathology and therapy
- D9520 The cleft-palate patient

Summer Session

D9506 and D9529 are offered in the summer session. They are continuations of courses offered in the spring term.

Program in Pedodontics

The two-year, full-time Pedodontic Program leading to a Certification of Training approved by the Council of Dental Education includes courses in basic sciences, developmental psychology, and dental and medical courses in various aspects of pedodontics and care for the handicapped patient.

During the two years, there is emphasis on clinical practice, utilizing behavior modification and training in analgesia, I.V. sedation, and operating room procedures. Clinical aspects of pedodontics are stressed in conjunction with preventive dentistry concepts and growth development of the child. An integral part of the program is a literature review of classical pedodontic readings and case presentations. Orthodontic techniques are stressed. The entire course is designed to facilitate taking the Specialty Board of the American Board of Pedodontics. The student conducts an investigation of a pedodontic nature and it is presented in the form of a thesis. Undergraduate teaching rotation is required in the second year.

A United Cerebral Palsy Clinical Fellowship is available during the second year of this program to students who demonstrate superior ability. The fellowship carries an annual stipend and is sponsored by the United Cerebral Palsy Research & Education Foundation, Inc.

Descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn Term

- D9900 Research methodology
- D9904 Craniofacial anomalies
- D9905 Oral medicine and clinical oral pathology
- D9911 Functional anatomy
- D9913 Radiology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationships with dentistry
- D9920 Histology and embryology
- D9921 Statistics
- D9956 Introduction to orthodontics
- D9957 Cephalometrics: growth and development
- D9602 Clinical practice in pedodontics
- D9606 General anesthesia technique at Roosevelt and Columbia (Rotation)
- D9610 Nitrous-oxide oxygen psychosedation at Blythedale (Rotation)
- D9614 Satellite clinic at Human Resources (Rotation)
- D9620 Preventive and interceptive orthodontic clinic
- D9624 Clinic for the handicapped child
- D9631 Thesis
- D9636 Pedodontic guest lecture seminar series

- D9640 Orthodontic technique laboratory
- D9643 Review of literature for the Academy of Pedodontic Boards
- D9650 Undergraduate pedodontic instruction preceptorship (Rotation)
- D9655 Satellite clinic at the Institute for the Blind (Rotation)
- D9657 Manhattan Development Center (Rotation)

Spring Term

D9601, D9603, D9607, D9611, D9615, D9621, D9625, D9632, D9637, D9644, D9651, D9656, D9658, and D9906 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9652 Dental materials
- D9901 Cariology
- D9902 Pediatrics related to dentistry
- D9908 Clinical stomatology conferences
- D9914 Theory and practice of periodontics
- D9923 Pharmacotherapeutics

Second Year

Autumn Term

- D9604 Clinical practice in pedodontics
- D9608 General anesthesia technique at Roosevelt and Columbia (Rotation)
- D9612 Nitrous-oxide oxygen psychosedation at Blythedale (Rotation)
- D9616 Satellite clinic at Human Resources (Rotation)
- D9618 Satellite clinic at the Institute for the Blind (Rotation)
- D9622 Orthodontics for the handicapped patient (Rotation)
- D9626 Clinic for the handicapped child
- D9628 Preventive and interceptive orthodontic clinic
- D9630 Intravenous psychosedation clinic (Rotation)
- D9633 Thesis
- D9635 Methodology in preventive dentistry
- D9638 Pedodontic guest lecture seminar series
- D9645 Review of literature for the Academy of Pedodontic Boards
- D9653 Undergraduate pedodontic instruction preceptorship (Rotation)
- D9659 Manhattan Development Center (Rotation)

Spring Term

D9605, D9609, D9613, D9617, D9619, D9623, D9627, D9629, D9634, D9638, D9646, D9654, and D9660 are offered in the spring term. They are a continuation of courses offered in the autumn term.

- D9642 Child developmental psychology
- D9647 Neurological conditions
- D9649 Anesthesiology and related pharmacotherapeutic measures
- D9910 Clinical stomatology conferences

Program in Periodontics

The two-year program of courses in the theory and practice of periodontology prepares the dentist for specialized service; the curriculum also includes instruction in the basic biologic and related medical sciences. Training in the scientific approach to a problem is provided in an atmosphere of intellectual inquiry.

exposure to the application of a variety of therapeutic approaches is offered, and the student is encouraged to apply fundamental biological knowledge and judgment to clinical problems. Students are also given an opportunity to assist in clinical instruction of undergraduate dental students. This program is designed to fulfill the necessary education requirements of the American Board of Periodontology for candidacy in a postdoctoral specialty. Full credit is given for all courses that the student completes even though he or she does not continue into the second year of advanced study.

Complete descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn Term

- 9900 Research methodology
- 9700 Clinical practice in periodontics
- 9905 Oral medicine and clinical oral pathology
- 9911 Functional anatomy of the head and neck (*alternate years*)
- 9913 Radiology
- 9915 Psychiatry and psychosomatic medicine, and their interrelationship with dentistry
- 9965 Bacteriology
- 9704 Seminars in periodontics
- 9708 Seminars in periodontics: periodontal therapy
- 9962 Seminars in periodontics: plaque, calculus, microbiology, and immunology
- 9964 Extension of D9962
- 9720 Treatment planning in periodontics
- 9951 Periodontal wound healing seminars
- 9920 Histology and embryology
- 9921 Statistics
- 9922 Physiology
- 9724 Minor tooth movement in periodontics
- 9727 Histology and histopathology of periodontal structures
- 9916 Temporomandibular joint disorders

Spring Term

9701, D9705, D9709, D9721, D9726, D9728, D9906, and D9952 are offered the spring term. They are continuations of courses offered in the autumn term.

- 9901 Cariology
- 9908 Clinical stomatology conferences
- 9912 Anatomy of the head and neck
- 9923 Pharmacotherapeutics (*alternate years*)
- 9713 Periodontal surgical conference
- 9726 Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics

Second Year

Autumn Term

9702, D9710, D9714, D9722, and D9953 are offered in the second year. They are continuations of courses offered in the first year.

- D9716 Seminars in periodontics: journal club
- D9718 Seminars in periodontics: the social science and cultural background of health care, dentistry, and periodontics
- D9729 Restorative dentistry related to periodontics

Spring Term

D9703, D9711, D9717, D9719, D9723, D9730, and D9954 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9731 Practice management in periodontics
- D9910 Clinical stomatology conferences
- D9923 Pharmacotherapeutics (*alternate years*)

Courses of Instruction

In the following course listings where the name of the subject or area of studies does not appear before the course number it is understood to be the same as the heading preceding each group of courses.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Dental Science (Core Courses)

D9900x. Research methodology* **Professor Naidorf and staff.**

A general consideration of the philosophy and methodology of basic and applied research, including a discussion of the art of scientific investigation, the laws and ethics of human experimentation, potential areas of research in the basic sciences and clinical dentistry, the use of the library, the role of statistics, techniques of clinical research, writing for the scientific literature, animal care, and funding of projects. *One two-hour lecture a week.*

D9901y. Cariology* **Professor I. Mandel.**

Lectures in the etiology and histopathology of dental caries, including recent advances in caries prophylaxis. *Seven lecture hours.*

D9902y. Pediatrics related to dentistry **The staff.**

A synopsis of pediatrics. Certain peculiarities of growing children of significance in dentistry. The basic concepts and practical aspects of psychological care of children. *One two-hour and one one-hour demonstration a week.*

D9903y. Orofacial growth and development* **Professor Horowitz.**

Lectures on childhood and adolescent growth: development of the dentition; hereditary and environmental influences on growth; craniofacial malformations; and prediction of facial growth. *Sixteen lecture hours.*

D9904x. Craniofacial anomalies **Professor Horowitz.**

Discussion of various craniofacial anomalies, with emphasis on etiology, morphology, development, and clinical management. *Eight seminar hours.*

D9905x. Oral medicine and clinical oral pathology* **Professor D. J. Zegarelli and staff.**

A comprehensive description and discussion of the diseases of the mouth, jaws, and related structures. Emphasis is on clinical, radiographic, and histologic differential diagnosis. *One two-hour lecture a week for sixteen weeks.*

D9908y, D9910y. Clinical stomatology conferences **Professors D. J. Zegarelli and E. V. Zegarelli, and staff.**

These weekly conferences consist of the presentation of case histories having interesting and diagnostically challenging diseases of the mouth and jaws. The diagnosis and treatment of each case are discussed by and with the audience, the latter including undergraduate dental students, dental hygiene students, postgraduate students, residents, practitioners, and faculty. *Weekly one-hour conferences.*

D9911x. Functional anatomy of the head and neck* **Professor Moss.**

A concise review of the functional interrelations and their dynamic significance. Pertinent clinical topics are analyzed from this viewpoint. *One two-hour session a week. Given in alternate years.*

D9912y. Anatomy of the head and neck

Professors Noback and Blitzer.

Lectures and dissection. *Three hours a week for sixteen weeks.*

D9913x. Radiology

Professor Donovan.

The principles of dental x-ray technique, with emphasis on lateral, anteroposterior, sinus and temporomandibular joint techniques. *Eight two-hour lectures and two three-hour clinical sessions.*

D9914y. Theory and practice of periodontics

Professor Gottsegen.

Four one-hour lectures.

D9915x. Psychiatry and psychosomatic medicine, and their interrelationships with dentistry*

Professor Lefer.

Basic concepts of psychodynamics, psychopathology, and psychosomatic medicine presented with clinical material showing their synthesis with dentistry. *Eleven two-hour lectures.*

D9916x. Temporomandibular joint disorders

Professor Marbach and staff.

Lectures, discussions, and demonstrations on the diagnosis and treatment of temporomandibular joint disorders. Includes a study of the clinical physiology and pathology of facial pain, and the relationship between systemic diseases and facial pain syndromes. *Ten one-hour lectures plus demonstrations.*

D9917x-D9918y. Temporomandibular joint dysfunction and myofascial pain dysfunction problems

Professor Marbach and staff.

A review of skeletal mechanics of the temporomandibular joint and masticatory musculature in its relations to the head and shoulder girdle. The diagnosis of temporomandibular joint pain in terms of muscle spasm and aberration from normal occlusion. *One one-hour lecture or seminar and one three-hour clinical session a week.*

D9919y. Genetics

Professor Horowitz.

Lectures and demonstrations on principles of genetics. *Six hours.*

D9920x. Histology and embryology

Professor Moss-Salentijn.

Growth and development of the jaws and face, and microscopic anatomy of the teeth and surrounding and related tissues of the oral cavity. Application to clinical dentistry. *One one-hour lecture a week for four weeks, followed by one two-hour seminar a week for ten weeks.*

D9921x. Statistics

Professor Horowitz.

A review of fundamental principles in statistics, with emphasis on the interpretation of dental statistics. Some attention to current concepts of caries etiology and control. *Nine one-hour lectures.*

D9922x. Physiology

Professors Di Salvo and I. Mandel.

A review of the physiological principles underlying certain oral functions, with special emphasis on sensory, motor, and secretory activity. *Fifteen one-hour lectures.*

D9923y. Pharmacotherapeutics*

Professor Kahn.

Given in alternate years.

Lectures on the application of pharmacologic principles of therapeutics in dental practice. *Eleven one-hour lectures.*

Dental Science (Interdepartmental Courses)

D9951x-D9952y, D9953x-D9954y. Periodontal wound healing seminars

Professor Morris.

The basic principles of wound healing are applied to the special problems of repair presented to dental and periodontal structures. These tissues are studied as they react to the various methods of therapy. *One one-hour seminar a week.*

D9955y. Speech pathology and therapy

Professor Mysak.

Language and speech development in children, and speech pathology and therapy in the patient with oral impairment. *Three two-hour lectures.*

D9956x. Introduction to orthodontics

Professor Nahoum and staff.

Consists of a series of lectures which survey the entire field of orthodontics. Provides the student with background information that is required in order to begin treating patients and prepares the student for a more detailed study of laboratory and clinical procedures. *Thirty lecture hours.*

D9957x. Cephalometrics: growth and development

Professor Nahoum.

A survey of growth and development of the dentition and face, including the theory and practice of taking standardized head roentgenograms utilizing a cephalostat, laboratory procedure in the methods of making tracings, and the clinical evaluation of headfilms. *Ten one-hour lectures and four three-hour laboratory sessions.*

D9958x-D9959y. Orthodontic diagnosis and treatment planning

Professor Di Salvo and staff.

One one-hour seminar a week.

D9961y. Maxillofacial follow-up clinic

Professor Cosman.

fifteen two-hour sessions.

D9962x-D9964y. Seminars in periodontics, plaque, calculus, microbiology, and immunology

Professors Salkind, Oshrain, and Fine, and staff.

Intensive and critical review of the literature relating to formation, structure, chemistry, and bacteriology of plaque and calculus; the nature of salivary and crevicular fluids; leading to and covering the microbiology and immunology of periodontal disease. *One-and-one-half hours a week for twenty weeks. D9964y runs until March.*

D9965x. Microbiology and immunology

Professors Naidorf and Fine.

Principles of bacteriology and immunology, with particular reference to applications in aseptic procedures and the control of infection in endodontics and periodontics; the relationships between the immune and inflammatory responses are stressed with particular references to clinical endodontics and periodontics. *Lectures: thirty-two hours.*

Endodontics

D9200x-D9201y, D9202x-D9203y. Theory and practice of endodontics

Professors Leavitt, Naidorf, and Ambinder.

Lectures and seminars on past and current theory in endodontics and its relation to modern endodontic practice. Guest lecturers will speak on current research developments in the field of endodontics or related disciplines. *Ninety hours.*

D9204x. Anatomy and technic of endodontics

Professor Moreinis.

Lectures and laboratory sessions on the anatomy of roots, pulp chambers, and root canals. Lectures and demonstrations on endodontic armamentarium and materials. Lecture demonstrations, and technic sessions on the chemo-mechanical preparation and filling of root canals of extracted teeth. *Forty-five hours.*

D9205x-D9206y, D9207x-D9208y, D9209z. Clinical practice in endodontics

The staff.

Supervised clinical experience in all phases of operative endodontics. During the second year, instruction and experience teaching undergraduate clinical endodontics is included. *Average of 140 hours a term.*

D9210x-D9211y, D9212x-D9213y. Review of endodontic literature

Professors Leavitt, Naidorf, and Ambinder.

Intensive discussion of past and current literature in endodontic and related fields. Reported by students on reading assignments. *One hundred ninety hours.*

D9214y. Pain seminars

Professor Fried.

All aspects of pain are discussed from the endodontic viewpoint.

D9215y. Endodontic-periodontic relationships

Professor Leavitt.

The theory and treatment of combined endodontic-periodontic problems. *Ten seminar hours.*

D9216y. Pulp biology

Professors Fine, Greenfield, Moss-Salentijn, and Naidorf.

Normal and pathological pulps. Biological background for pulpal injury, inflammation, and repair. *Sixteen two-hour sessions and demonstrations.*

D9217x-D9218y, D9219x-D9220y. Surgical endodontics

Professor Rothenberg and staff.

Lectures, demonstrations, and clinical experience in problems requiring combined endodontic and surgical treatment. *Lecture: thirty hours. Clinic: eight hours.*

D9221x-D9222y. Thesis

Professor Naidorf.

The student conducts an investigation dealing with a subject of the student's choice and approved by the program director concerned. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

D9227x-D9228y, D9229x-D9230y. Guest lecture series

Prominent clinicians and researchers are invited to lecture or conduct seminars in the area of late advances in endodontics theory, practice, or research.

Orthodontics

D9500x. Orthodontic technic

Professor Di Salvo and staff.

Intensive technical instruction and lectures in the assembling and manipulation of typodonts of removable, labiolingual, edgewise, extraoral forces, twinwire and Begg appliances, retainers, and bite plates. *Six three-hour sessions a week for eleven weeks.*

D9501x-D9502y and D9503z. Clinical orthodontic practice

Professor Di Salvo and staff.

Supervised clinical practice in the use of removable, labiolingual, edgewise, extraoral forces, twinwire and Begg appliances, retainers, and bite plates. *Six three-hour sessions a week.*

D9504x-D9505y and D9506z. Clinical orthodontic practice
Professor Di Salvo and staff.

A continuation of *D9501-D9502* and *D9503*.

D9507x. Biomechanics

Professor Blechman

Seven two-hour lectures.

D9508y. Practice management in orthodontics

Dr. Ruderman.

Lectures on the administration of orthodontic practice. *Five two-hour lectures.*

D9509x-D9510y. Orthodontic diagnosis and treatment planning

Professor Di Salvo and staff.

One one-hour seminar a week.

D9511x. Dental anthropology and evolution

Professor Oppenheimer.

Four two-hour lectures.

D9513y. Public health aspects of orthodontics

Professor Huettner.

Four two-hour lectures.

D9514y. Oral and maxillofacial surgery related to orthodontics

Professor Rankow.

Practical considerations of unerupted teeth, extreme prognathism, intermaxillary wiring, and cleft-palate cases. *Four two-hour lectures.*

D9515x-D9516y. Orthodontic literature review

Professor Nahoum.

One two-hour seminar a week.

D9517x-D9518y. Orthodontic literature review

Professor Kohler.

One two-hour seminar a week.

D9519x. Dental materials

Professor Ayers.

Lectures and laboratory on the physical and chemical properties of the metals and other materials used in orthodontics and pedodontics, with clinical applications. *Four one-hour lectures.*

D9520y. The cleft-palate patient

Professors Luban, Bruno, and Dr. Cole.

Lectures on the various problems in the treatment of the cleft-palate by the orthodontist. Coordination with related specialties is emphasized. *Six two-hour lectures.*

D9521x-D9522y. Theory and practice of orthodontics

Professor Di Salvo and staff.

Lectures, discussions, and demonstrations, in which theory is correlated with clinical observation and practice. *Three one-hour lectures a week.*

D9523x-D9524y. Theory and practice of orthodontics

Professor Di Salvo and staff.

A continuation of *D9521-D9522*. *One one-hour lecture a week.*

D9525y-D9526z, D9527x-D9528y, D9529z. Thesis

Professor Di Salvo.

The student conducts an investigation dealing with a subject of the student's choice and approved by the program director. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

Pedodontics

**D9600x-D9601y. Pedodontic theory: technique and practice
Professor Davis.**

Conferences and visual education on basic concepts of operative procedures, pulp therapy and space maintenance.

**D9602x-D9603y, D9604x-D9605y. Clinical practice in pedodontics
Professors Davis and Metcalf.**

Supervised clinical practice in all phases of pedodontics and related disciplines.

**D9606x-D9607y, D9608x-D9609y. General anesthesia technique and
Roosevelt and Columbia (Rotation)**

Professors Bachman and Kowek.

Operating room techniques and their utilization for implementing pedodontic therapy.

**D9610x-D9611y, D9612x-D9613y. Nitrous-oxide oxygen psychoseda-
tion (Rotation) at Blythedale**

Professors Rosenberg and Piesman.

The use of nitrous-oxide and oxygen psycho-sedative techniques for the management of the pedodontic patient.

**D9614x-D9615y, D9616x-D9617y. Satellite clinic at Human Resources
(Rotation)**

Professor King.

Dental procedures for the handicapped pedodontic patient.

**D9655x-D9656y, D9618x-D9619y. Satellite clinic at the Institute for
the Blind (Rotation)**

Professors Cohen and Hammer.

Dental procedures for the pedodontic patient with blindness and other handicapping conditions.

**D9622x-D9623y. Orthodontics for the handicapped patient (Rotation)
Professor Koster.**

Orthodontic practice for the handicapped child and adult.

**D9624x-D9625y, D9626x-D9627y. Clinic for the handicapped child
Professor Rocco.**

Special dental clinic for the handicapped child with emphasis on management.

**D9620x-D9621y, D9628x-D9629y. Preventive and interceptive ortho-
dontic clinic**

Professors Dimond and Lasoff.

Theory and application of preventive and interceptive orthodontic techniques, including cephalometric and related diagnostic evaluations for the pedodontic patient.

**D9630x. Intravenous psychosedation clinic (Rotation)
Professors Mandel and Minervini.**

Techniques of intravenous psychosedation under the auspices of the Oral Surgery Department for augmentation of patient management.

**D9631x-D9632y, D9633x-D9634y. Thesis
Professor Davis.**

The graduate student conducts an investigation of an approved area of interest in the field of pedodontics.

**D9635x. Methodology in preventive dentistry
Professor I. Mandel.**

Under the direction of the Department of Preventive Dentistry, seminars and projects pertinent to the prevention of dental pathology are conducted.

D9636x-D9637y, D9638x-D9639y. Pedodontic guest lecture seminar series**Professor Davis.**

Prominent individuals in the field of pedodontics present two hour seminars on various contemporary topics.

D9640x. Orthodontic technique laboratory**Staff.**

A laboratory course designed to instruct the student in the principles of design and construction of various orthodontic appliances.

D9641y. Nutrition**The staff, Institute of Human Nutrition.**

Study of human nutrition with emphasis on the requirements of normal growth and development and on the prevention of oral pathology.

D9642y. Child developmental psychology**Professor Davis.**

A literature review and seminar series designed to prepare the pedodontist to understand and implement the various techniques of behavior management.

D9643x-D9644y, D9645x-D9646y. Review of literature**Professor Metcalf.**

Classical review of the pedodontic literature.

D9647y. Neurological conditions**Professor Metcalf.**

An overview of the human nervous system and pathologies with reference to clinical expectations and management.

D9649y. Anesthesiology and related pharmacotherapeutic measures**Professor Jaffe.**

Theoretical background for the use of pharmacotherapeutic adjuncts to therapy.

D9650x-D9651y, D9653x-D9654y. Undergraduate pedodontic instruction preceptorship (Rotation)**Professor Davis.**

Instruction by graduate students of the undergraduate student in clinical pedodontics.

D9652y. Dental materials**Professor Davis.**

Theoretical aspects of the selection and use of the various restorative materials in pedodontics.

D9657x-D9658y, D9659x-D9660y. Manhattan Development Center (Rotation)

Periodontics

D9700x-D9701y, D9702x-D9703y. Clinical practice in periodontics**Professor Gottsegen and staff.**

Clinical experience in diagnosis, treatment planning, and all the phases of periodontal therapy. Exposure to a wide variety of surgical procedures, various occlusal concepts, simple orthodontic procedures, temporary stabilization methods, and grounding in patient management. Emphasis on motivating the patient to practice oral hygiene. *Five clinic sessions a week in the first year and six a week in the second year.*

D9720x-D9721y, D9722x-D9723y. Treatment planning in periodontics**Professors Johnson, Wasserman, and Geiger.**

D9724x. Minor tooth movement in periodontics
Professor Hirschfeld.

The selection of cases and technic for performing minor tooth movements. *One hour of lecture a week.*

D9726y. Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics
Professors Tannenbaum and Johnson.

One one-and-one-half hour lecture and one seminar a week for one semester.

D9727x-D9728y. Histology and histopathology of periodontal structures

Professor Moskow.

Study of microscopic aspects of periodontium in health and disease as they relate to clinical findings. Lectures and laboratory including microprojection. *Two hours a week for one year.*

D9729x-D9730y. Restorative dentistry related to periodontics
Professors Lucca, Grayson, Goldin, Scarola, Jutkowitz, and Widrow.

Restorative dentistry significant to periodontal problems. *One one-hour lecture a week for one year.*

D9731y. Practice management in periodontics
Professor Hirschfeld.

One one-hour lecture a week for eleven weeks.

Periodontics Seminars

The following seminars provide the didactic core of periodontics and are organized as several concurrent and consecutive series devoted to different subject areas. This series is a review of the basic and significant periodontic literature having to do with the biology of the periodontal structures, periodontal disease, and periodontal treatment; it concerns itself with the role of periodontics and the surrounding world.

D9704x-D9705y. Seminars in periodontics and literature review
Professors Gottsegen, Abbatiello, Cantor, and Winter.

A comprehensive and intimate familiarity with the literature is developed by the extensive seminar program. In addition the ability to read critically, to evaluate, and to present personal case material is engendered. *One two-hour seminar a week for one year.*

D9708x-D9709y, D9710x-D9711y. Seminars in periodontics: periodontal therapy
Professors Stein and Winter.

Review of the literature in periodontal therapy. Students become familiar with the historical development of periodontal therapeutic techniques by exploring the literature, reading the classic articles, and critically analyzing the pertinent research. *One-and-one-half hours a week for one year.*

D9713y, D9714x-D9715y. Periodontal surgical conference
Professors Abbatiello, Stein, and Silston, and staff.

Seminars in periodontal surgical problems; literature review, critical analysis, and student case presentation. *One one-and-one-half hour seminar a week throughout the academic year.*

D9716x-D9717y. Seminars in periodontics: Journal club
Professor Wasserman.

A seminar series based on selected articles from current journals. Critical analysis of the assigned paper requires research and review of pertinent literature. The objective of this course is to develop habits of critical reading of the scientific literature. *One-and-one-half hours a week for one year.*

9718x-D9719y. Seminars in periodontics: sociocultural and economic aspects of periodontics **Professor Gottsegen and staff.**

series of seminars and discussions in which the historical and ethical background of medicine and dentistry becomes the framework for exploring current socioeconomic issues related to the health professions. This course is based on the belief that the increasing social responsibility demanded of leaders of the health professions requires specialists with a broad cultural understanding and strong ethical values as well as advanced technical skill and scientific knowledge. *One-and-one-half hours a week for one year.*

Fellowship and Postdoctoral Programs in Basic Sciences

recognition of the need for advanced education in the basic sciences and to qualify graduates in dentistry as teachers and investigators, fellowships are offered for study and research in anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. Fellows are normally enrolled in the Graduate School of Arts and Sciences of the University as prospective candidates for the degree of Doctor of Philosophy.

Appointments are made on a yearly (twelve-month) basis, with opportunity for renewal or extension at the discretion of the chairman of the department in which the student is enrolled. The specific objectives of the program are to furnish more complete preparation for careers in dental education and to offer training in investigation so that research in important unsolved problems indigenous to dental science will be extended. Students may apply also to the United States Public Health Service for financial aid.

The formal instruction is elected from courses offered in the Graduate School of Arts and Sciences, the School of Dental and Oral Surgery, the College of Physicians and Surgeons, and the School of Public Health. Each fellow must formulate and carry out, under supervision, an original investigation. During the period of appointment, fellows are expected to remain in residence and devote their entire time to study and research. In order to maintain contact with clinical dentistry, the student may attend clinics in the School of Dental and Oral Surgery and will be given an opportunity to participate in undergraduate teaching.

Fellowship Application

To apply for a fellowship in the basic sciences for dentists, the applicant should obtain, from the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032, an application form which should be filled out and returned to the same address. Applicants should also arrange for each college or university they have attended to send two official transcripts of their records to the Postdoctoral Admissions Office. A personal interview with the applicant is required. The applicant must be accepted not only by the School of Dental and Oral Surgery but also by the chairman of the specific basic science department within which he or she wishes to study. Applications may be submitted at any time. Appointments are made as vacancies occur.

Admission to the Graduate School of Arts and Sciences

Upon acceptance to a postdoctoral program, the applicant must apply for admission as a regular graduate student in the Graduate School of Arts and Sciences of Columbia University. The admission procedure, and the procedure and dates for registration, including payment of fees, are given in the bulletin of

the Graduate School of Arts and Sciences, a copy of which can be secured by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 100 Low Memorial Library, Columbia University, New York, N.Y. 10027.

Postdoctoral Trainees in Comparative Biology of Calcification

Two qualified applicants may be accepted each year for training under the provisions of a grant in comparative biology of calcification. Such training may or may not lead to the Ph.D. degree, depending on the specific needs and desires of the applicant. Further information can be obtained by writing to Professor Melvin L. Moss, School of Dental and Oral Surgery, who currently holds the grant.

The Dental Hygiene Programs

A Career in Dental Hygiene

Admission Procedure

The Baccalaureate Programs

Program A

Program B

The Graduate Program

A Career in Dental Hygiene

As the need for preventive dental services increases, the spotlight focuses on the dental hygienist. The present and future demands, both national and international, far exceed the number of dental hygienists now available and in training.

The programs in dental hygiene offer excellent preparation for taking advantage of the countless opportunities open to registered dental hygienists in different fields. In private practice the dental hygienist, as a member of the dental health team, provides preventive clinical services and education under the supervision of the dentist.

In compliance with school policies and under the direction of the supervising dentist and the school administrator, the dental hygienist provides clinical services and health education in a program designed to improve and maintain the dental health of school children.

In public health positions the dental hygienist aids in the maintenance of the total health of the community by augmenting the services of the public health dentist in areas of prevention, education, and care.

In industry the dental hygienist provides preventive and health educational services for the beneficiaries of the industrial health programs.

In hospitals, as a member of the total health team, the dental hygienist provides maintenance and preventive services to assist the patient in the attainment of maximum health.

In research, under the supervision of the dentist, the physician, and the basic scientist, the dental hygienist participates in areas of basic and applied research.

The Peace Corps, missionary service, American industries abroad, and dental hygiene schools in Europe all provide openings for young professionals with a desire to expand their horizons in dentistry and dental health.

In dental hygiene education the graduate hygienist provides clinical and classroom instruction for dental hygiene students in training, and dental hygienists with advanced degrees hold administrative positions in dental hygiene programs.

In whatever field dental hygienists choose to serve, they hold positions of responsibility. They are in constant contact with the dentist, with public health personnel, and with governmental and voluntary health agencies.

Admission Procedure

Prospective applicants may use the application form attached to this bulletin or write to the Division of Dental Hygiene. The completed form should be returned with the application fee to the Division of Dental Hygiene, with a check or money order for \$35 made payable to Columbia University. This fee is not returned and is not credited toward tuition. Applicants should also ask each of the colleges and universities they have attended to send official transcripts of their academic records directly to the Division of Dental Hygiene, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032. Two letters of recommendation from former instructors also must be submitted.

Candidates for the B.S. degree, Program A, are admitted only in September; candidates for the B.S. degree, Program B, candidates for the M.S. degree, and students who are not degree candidates are admitted in September, January, or July.

Acceptance Fee

Within two weeks after applicants have been informed of their acceptance, they must notify the Director that they intend to become degree candidates. A check or

money order for \$200, payable to Columbia University, must accompany the applicant's acceptance. If the applicant registers at the next enrollment, the amount of the acceptance fee will be deducted from the tuition for that term. If the applicant does not register, the acceptance fee will not be returned.

Admission to Individual Courses

Students who do not wish to become degree candidates may be granted permission to attend a course or courses to a maximum of twelve points if they meet the standards of scholarship and attendance required of degree candidates.

Program A

Admission Requirements

Applicants must have completed two years or 60 semester points of work in approved colleges or universities, including one course in each of the following subjects: speech, English composition, sociology, psychology; 4 points of general chemistry with laboratory; and 4 points of biology with laboratory. Additional courses in chemistry and biology are recommended.

Applicants must possess current Basic Life Support and Cardio-Pulmonary Resuscitation certificates from the Red Cross which must remain in force throughout the program.

Applicants whose credentials are acceptable for admission will receive an invitation for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the Alumni in their respective localities, at the discretion of the Admissions Committee.

It is suggested, but not required, that applicants take the Dental Hygiene Aptitude Test of the American Dental Hygienists' Association.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points, 66 points of which are required courses. The remaining points, including the English requirement as determined by the English Placement Test, may be selected from courses offered at the School of General Studies or in other University divisions.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

3017x. Microbiology **2 pts**
Morphology and physiology of microorganisms. The role of microorganisms in health and disease with emphasis on the microorganisms associated with the oral cavity.

3033x. Biochemistry **2 pts**
The chemical reactions of the components of the living cell; proteins, carbohydrates, lipids, nucleic acids, vitamins, and hormones.

3040x. Human anatomy and physiology **6 pts**
A correlated survey of human anatomy and physiology with special emphasis on topics of special interest to oral health and care. Lecture and laboratory with human materials.

D3067y. Histology 3 p

A basic course in general and oral histology and oral embryology. Special emphasis is placed on the microscopic anatomy of the hard and soft tissues of the oral cavity; use of the microscope in laboratory sessions.

D3100x. Oral anatomy 3 p

The anatomy and physiology of the structures of the oral cavity. Emphasis is placed on tooth development and morphology of the permanent and deciduous dentition. Through lecture, slide projections, and laboratory carving and drawing requirements, the students are prepared to meet course objectives and to experience a solid foundation for dental hygiene education.

D3113y. Pharmacology 2 p

Orientation to the study of pharmacology as it affects the clinical practice of dental hygiene and dentistry. The particular uses of drugs and antibiotics and the relative value of germicidal agents.

D3126y. Radiology 3 p

Principles and procedures of oral radiology which relate to diagnostic yield. Topics include radiation, physics and biology, radiographic armamentarium and techniques, radiograph interpretation, and radiation protection. Lectures, demonstrations, and practice.

D3138x. Myofunctional therapy 2 p

Etiology and symptomatology of oral habits affecting occlusion, mastication, deglutition, facial expression, and speech. Cephalometric roentgenography and photography used in the study of facial growth and dental and facial relationships. Methods and techniques for correcting poor oral habits.

D3139y. Myofunctional therapy clinic 1 p

Clinical practice in habit retraining, including interviewing, examination, data collection and interpretation, and therapy techniques.

D3151y. Stomatology 2 p

Pathology that affects the teeth and their investing tissues and contributes to systemic disturbances.

D3163x. Periodontics 2 p

The etiology of periodontal disease and the anatomy of the supporting tissues in health and disease are correlated with the therapeutic techniques enabling the student to clinically apply the principles of periodontal disease prevention and initial periodontal therapy.

D3175x. Pain control 2 p

Lectures and clinical sessions on basic and current concepts of the administration of local anesthesia.

D3200y. Methods in oral health education 2 p

A study of the development of behavioral skills in motivating and communicating dental health education to the patient.

D3234y. Critique of dental literature 2 p

Introduction to the critical examination of dental literature. Evaluation of scientific writing and research methodology is related to the needs of the dental hygienist.

D3268x. Introduction to methods of research 2 p

Introduction to the philosophy, principles, and methods of scientific inquiry. Topics include research planning, techniques of making observations, and analysis and presentation of findings.

D3350x. Social dental hygiene I 2 p

Basic orientation to principles of public health. An ecological approach to socio-community health designed through seminar sessions, class discussions, assigned reading to sensitize the student to the dental needs of the community.

- 351y. Social dental hygiene II** **3 pts**
 ough field assignments in selected social settings, the student participates in community health care planning and becomes acquainted with patterns for the delivery of comprehensive health care services and the role of the dental team in these patterns. Students spend full day per week in a setting where they initiate and carry out a simple research project.
- 400x. Preventive oral health services I: Lecture** **2 pts**
 ntroduction to basic concepts and principles of preventive oral health services the dental hygienist may render to the public.
- 401x. Preventive oral health services I: Clinic** **2 pts**
 ents spend nine hours each week in a clinical practice setting with lab partners and patients.
- 402y. Preventive oral health services II: Lecture** **2 pts**
 ntinuation, expansion, and reinforcement of the preventive oral health services performed by the dental hygienist through clinical application of correlated lecture material. Emphasis on developing professional conduct and judgment, technical accuracy, and personal relations.
- 403y. Preventive oral health services II: Clinic** **2 pts**
 ents spend nine hours each week in a clinical setting that provides direct services to the patient.
- 404x. Preventive oral health services III: Lecture** **2 pts**
 gned to familiarize the dental hygiene student with different dental materials available and utilized in dental practice.
- 405x. Preventive oral health services III: Laboratory** **1 pt**
 oratory experience provides a basis for understanding the procedures involved in using restorative and other dental materials, especially as they relate to expanded services performed by the dental hygienist.
- 406x. Preventive oral health services III: Clinic** **2 pts**
 ents spend fifteen hours each week providing direct patient services.
- 407y. Preventive oral health services IV: Lecture** **2 pts**
 gned to develop awareness in the dental hygiene student of total patient care within the dental specialties. Additional preventive services are emphasized in order to function more effectively in the dental practice setting.
- 408y. Preventive oral health services IV: Clinic** **2 pts**
 ents spend fifteen hours each week providing direct patient services.
- 20x. Professionalism I** **1 pt**
 istory of dental hygiene and the American Dental Hygienists' Association, its structure and function, with particular emphasis on the principles and utilization of parliamentary procedures.
- 21y. Professionalism II** **1 pt**
 ependent study in the field of table clinic design and presentation. Under guidance of faculty adviser, students develop a table clinic for presentation at scientific sessions of local, state, and national meetings of professional organizations.
- 22x. Professionalism III** **1 pt**
 er rights and legislation affecting dental hygiene practice.
- 23y. Professionalism IV** **1 pt**
 é and interview techniques and practical application of legislation affecting oral health and careers of dental hygienists; scope of dental hygiene fields for employment; issues relevant to professional life.

D3546y. Oral health teaching

2

Designed to increase the student's ability to create, select, and utilize appropriate methods and materials in oral health education for elementary and secondary school programs. Students provide a minimum of eight one-hour units of instruction for various grade levels in area schools.

Nutrition M6230x. Nutrition in health and disease

3

An introductory course in nutrition presented through the Institute of Human Nutrition.

ogram B

mission Requirements

Applicants must have completed two years of dental hygiene education with average grade of B or better in colleges or universities approved by Columbia University.

Applicants must possess current Basic Life Support and Cardio-Pulmonary resuscitation certificates from the Red Cross which must remain in force throughout the program.

Applicants whose credentials are acceptable for admission will receive an invitation for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the Alumni in their respective localities, at the invitation of the Admissions Committee.

Applicants must submit National Board scores and clinical board scores.

Applicants from foreign countries are required to take the TOEFL examination (Test of English as a Foreign Language) in order to establish language proficiency; they must also show transcript evidence of having completed a curriculum comparable to a basic two-year curriculum that meets minimal guide-requirements as specified by the Council on Dental Education.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points, including the English composition requirement determined by the score on the English Placement Examination, 6 points of literature, 3 points of anthropology, and 3 points of fine arts. At least 35 of the required 70 points must be taken at the School of Dental and Oral Surgery. The remaining 35 points may be taken in a chosen area of concentration and selected courses offered at the School of Dental and Oral Surgery or in other divisions of the University.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or change instructors as may be necessary.

38x. Myofunctional therapy

2 pts

Study of the etiology and symptomatology of oral habits affecting occlusion, mastication, deglutition, facial expression, and speech. Cephalometric roentgenography and photography used in the study of facial growth and dental and facial relationships. Methods and techniques for correcting poor oral habits.

D3139y. Myofunctional therapy clinic

Clinical practice in habit retraining, including interviewing, examination, data collection, interpretation, and therapy techniques.

D3175x. Pain control

Lectures and clinical sessions on basic and current concepts of the administration of anesthesia.

D3187x or y. Dental specialties

Students rotate through clinical specialties of various divisions of the School of Dental Oral Surgery.

D3188x or y. Dental specialties

Students rotate through clinical specialties of various divisions of the School of Dental Oral Surgery.

D3190x or y. Independent study

Registration only by permission of the instructor under whose guidance work will be undertaken. Proposals must have prior approval of a faculty member. Students must plan to spend three hours per week for every point of independent study credit.

D3191x or y. Independent study

As stated under **D3190x** or **y**.

D3234y. Critique of dental literature

Introduction to the critical examination of dental literature. Evaluation of scientific work and research methodology as related to the needs of the dental hygienist.

D3268x. Introduction to methods of research†

Introduction to the philosophy, principles, and methods of scientific inquiry. Topics include research planning, techniques of making observations, and analysis and presentation of findings.

D3350x. Social dental hygiene I

Basic orientation to principles of public health. An ecological approach to socio-community health designed through seminar sessions, class discussions, and assigned reading to sensitize the student to the dental needs of the community.

D3351y. Social dental hygiene II

Through field assignments in selected social settings, the students participate in community health care planning and become acquainted with patterns for the delivery of comprehensive health care services and the role of the dental team in these patterns. Students spend one full day per week in a setting where they initiate and carry out a simple research project.

D3352x. Hospital administration

A year course where the autumn term is designed to give the dental hygiene student exposure to the didactic aspects of hospital administration. An overview of the functions of a hospital is presented including the history, relationship of the hospital to the community, administrative functions, and the integration of dental health services within the hospital setting.

D3353y. Hospital administration

Field work in hospital administration. Students spend two full days per week in a hospital setting where they participate in hospital administration and management within a dental facility.

D3420x. Professionalism I†

The history of dental hygiene and the American Dental Hygienists' Association, its structure and function, with particular emphasis on the principles and utilization of parliamentary procedures.

†A required course.

540x. Principles of teaching preventive oral health services 3 pts
 underlying philosophy and changing methodology of clinical dental hygiene instruction. Emphasis on analyzing and evaluating clinical techniques and developing interpersonal relationships necessary for functioning as a first-level clinical instructor.

541y. Principles of teaching preventive oral health services 2 or 3 pts
 Students spend six hours per week teaching in a clinical setting.

544x. Dental hygiene teaching theory 3 pts
 Principles, philosophies, and methods of classroom teaching.

545y. Dental hygiene teaching practice 3 pts
 Practical experience in developing skills in design, implementation, and evaluation of teaching techniques in dental hygiene subjects.

546y. Oral health teaching 2 pts
 Designed to increase the student's ability to create, select, and utilize appropriate methods and materials in oral health education for elementary and secondary school programs. Students provide a minimum of eight one-hour units of instruction for various grade levels in schools.

580x. Advanced preventive oral health services I† 2 pts
 Designed to expand the knowledge of the dental hygienist in the area of clinical practice with particular attention to the topics of clinical periodontics.

581x. Advanced preventive oral health services I: Clinic 1, 2, or 3 pts
 Students are assigned to postgraduate students in the division of periodontics for advanced teaching.

582y. Advanced preventive oral health services II 3 pts
 Lecture, seminar, and laboratory course in expanded functions in restorative dentistry; a four-hour lecture and three-hour laboratory per week.

583y. Advanced preventive oral health services II: Clinic† 1, 2, or 3 pts
 Students spend clinic time in preparation for clinical teaching in the second year; prerequisite course for D3540-D3541.

Areas of Concentrated Study

Dental Hygiene Education

Preparation for first-level clinical teaching in dental hygiene programs. This concentration provides basic understanding of educational philosophy and psychology, teaching methods and materials, and tests and measurements. More than 100 courses are available in different departments of Teachers College, Columbia University.

Public Health

Provide students with greater understanding of the role and function of dental hygienists in public health agencies and ways in which they work with health and dental agencies in the community. Students are fortunate to have a large number of natural public health, hospital, medical, and prepayment facilities and organizations in and around New York City for field experience. Courses are given at Teachers College and the School of General Studies.

† required course.

Speech

Preparation for teaching in a dental hygiene program or for transfer to graduate study in speech pathology. Students become familiar with major speech disorders related to dentistry and with the methods of preventing oral and facial defects. Courses are offered at Teachers College, the School of General Studies, and the School of Dental and Oral Surgery.

Nutrition

Preparation for the teaching of nutrition at different levels. Attention is given to the development of nutritional programs in various communities, both in this country and abroad. Courses in sciences and related fields are offered at Teachers College and in the School of General Studies.

Liberal Arts

Students who do not wish to concentrate in any of the areas listed above may supplement their dental hygiene courses with liberal arts courses selected according to their background and individual needs. These courses may be taken in the School of General Studies.

Pre-Dental Education

Students interested in continuing to dental school should be prepared to fulfill certain course requirements during the summer prior to entrance. After entering the program, the student must follow a rigid course of study prescribed for entrance to most dental schools.

The Graduate Program

The Master of Science degree program in dental hygiene was established in 1952 to fill the demand for graduate education in the field of dental hygiene. This program is designed to prepare candidates for positions in one of the following: dental hygiene education and program administration, community and public health dental hygiene, dental health teaching, or educational and clinical research.

Admission Requirements

- A bachelor's degree approved by Columbia University.
- A license to practice dental hygiene or dentistry.
- National Board scores and clinical board scores.
- Interview by invitation.
- Applicants from foreign countries are required to take the TOEFL examination (Test of English as a Foreign Language) in order to establish language competency.

Degree Requirements

- Completion of 18 points offered in the School of Dental and Oral Surgery.
- Completion of 14 elective points taken in the School of Dental and Oral Surgery or other divisions of the University.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors as may be necessary.

0001x. Teaching preventive oral health services: Instruction and evaluation 4,5, or 6 pts

An experiential study of clinical dental hygiene education utilizing the concepts inherent in a teaching model: instructional objectives, entering behavior, learning experiences, and evaluation procedures. Emphasis on creating and evaluating learning experiences for students in a preclinical phase of study in a dental hygiene curriculum leading to a baccalaureate degree.

0002x or y. Administration 2 or 3 pts

An overview of administrative theory and practice with attention to current issues in higher education that have impact on dental hygiene education.

0003x or y. Curriculum 2 or 3 pts

An overview of higher education as it relates to curriculum issues, organization, and development in the field of dental hygiene at the associate degree and baccalaureate degree levels.

0004x. Methods of research I 3 pts

An introduction to the philosophy, principles, and methods of scientific inquiry; topics include research planning, techniques of making observations, and analysis and presentation of findings. Opportunity to design research projects in clinical, social, or educational settings.

D6005x or y. Methods of research II 3 pPrerequisite: *D6004x*.

Under direction of the course instructor, students plan and execute a modest research project. Results of the investigation are presented in a thesis completed before the end of the term.

D6006x. Oral diagnosis 2 p

A comprehensive description of diseases of the mouth, jawbone, and related structures.

D6008y. Scientific writing and reporting 3 p

Development of techniques for preparation of publishable articles in professional journals and health-related lay publications, emphasizing grammar and style fundamentals through critical review, editing, evaluation, and production of manuscripts.

D6009x-D6010y. Professional laboratory experiences in dental hygiene education 3 pts each term

Introduction to the basic principles, philosophies, and methods of classroom teaching. Practical experiences in developing skills in design, implementation, and evaluation of teaching techniques in dental hygiene.

D6011x. Advanced periodontics: Lecture 2 p

Comprehensive study of periodontal disease: analysis of the science and techniques of periodontics.

D6012x or y. Advanced periodontics: Clinic 1, 2, or 3 p

Clinical experiences in scaling and root planing procedures.

D6013x-D6014y or D6013y-D6014x. Basic science foundation in dental hygiene practice 3 pts each term

Study of selected basic science topics under the supervision of the respective basic science instructors. Analysis of the topics as they relate to dental hygiene education.

D6017x or y. Externship in dental hygiene education 4½ or 9 p

Supervised administrative and teaching experiences in dental hygiene schools that cooperate with the dental hygiene program of the School of Dental and Oral Surgery. Experiences culminate with a written report and workshop presentation at the end of the term.

D6018x-D6019y. Myofunctional therapy 2 pts each term

Investigation of the etiology, symptomatology, and treatment of oral habits that may or may not affect occlusion, mastication, deglutition, facial expression, and speech. Students select an area of specific interest and develop a research project.

D6020x or y. Expanded services for the dental hygienist 3 p

Lecture and laboratory course in expanded functions in the area of restorative dentistry.

D6021x or y. Independent study 1, 2, or 3 p**D6022x or y. Independent study** 1, 2, or 3 p

Registration only by permission of the instructor under whose guidance work will be undertaken. Proposals must have prior approval of the faculty member. Students studying for one point must plan to spend three hours weekly on the project, two points require six hours per week, and three points require nine hours per week.

Registration, Expenses, and Financial Aid

Registration

Auditing Courses

Regulations

Fees

Estimated Expenses

Financial Aid

Honors

Living Arrangements

Student Organizations

License to Practice

Registration, Expenses, and Financial Aid

Registration

Before students may attend classes they must register in person during the registration period (see the Academic Calendar). Registration consists of filling out forms required for University records and payment of fees. Late registration requires the approval of the Dean of the School and payment of a late fee (see under the listing of fees, below).

All students will be asked to give Social Security numbers when registering in the University. Those who do not have a number should obtain one from their local Social Security office well in advance of registration.

Auditing Courses

Certificate and degree candidates in good standing who are enrolled for a full-time program in the current term may audit one or two courses (except during the summer term) in any division of the University (excluding Barnard College and Teachers College) without charge by filing a formal application in the Registrar's Office (Black Building, Room 138) during the change-of-program period. Applications require (a) the certification of the Registrar that the student is eligible to audit and (b) the approval of the dean of the school in which the courses are offered.

For obvious reasons elementary language courses, laboratory courses, studio courses and applied music courses, and seminars are not open to auditors; other courses may be closed because of space limitations. In no case will an audited course appear on a student's record, nor is it possible to turn an audited course into a credit course by paying the fee after the fact. Courses previously taken for credit may not be audited.

Regulations

According to University regulations, each person whose registration has been completed will be considered a student of the University during the term for which he or she is registered unless the student's connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which the student is first registered.

The privileges of the University are not available to any student until he or she has completed registration. Since, under the University statutes, payment of fees is part of registration, no student's registration is complete until his or her fees have been paid. A student who is not officially registered for a University course may not attend the stated period unless he or she obtains written consent of the appropriate dean or director.

The University reserves the right to withhold the privilege of registration or any other University privilege from any person with unpaid indebtedness to the University.

Attendance and Length of Residence

A student in good standing may, for a valid reason, be granted a leave of absence by the dean or director of the division of the University in which he or she is registered.

Students are held accountable for absences incurred owing to late registration.

No Dental Hygiene bachelor's degree will be granted to a student who has not registered for and attended Columbia University courses of instruction equivalent to two academic years of full-time work.

Unexcused absences in Dental Hygiene, exceeding the credit of the course (i.e., a 3-point course allows three hours of unexcused absence) will result in a failing grade for the term.

Religious Holidays

It is the policy of the University to respect its members' observance of their major religious holidays. Officers of administration and of instruction responsible for the scheduling of required academic activities or essential services are expected to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the academic calendar. Where scheduling conflicts prove unavoidable no student will be penalized for absence due to religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and the instructor involved, students and instructors should consult the appropriate dean or director. If an additional appeal is needed, it may be taken to the Provost.

Grading System and Requirements for Promotion and Graduation

D.D.S. Program

The following grading system is used: A, excellent; B, good; C, fair, F, failure; YC year course; P, pass.

A student may be admitted to the second, third, or fourth year of the dental curriculum only upon recommendation of the officers of instruction under whom the student has studied during the preceding year.

The School reserves the right to refuse readmission or promotion to any student who is believed for any reason to be unsuited to the conditions of study in the School.

Students are classified for readmission or promotion under the following categories: (1) recommended for advancement; (2) recommended for readmission to the same class; (3) recommended neither for advancement nor for readmission to the same class.

The degree of Doctor of Dental Surgery will be awarded upon completion of the prescribed curriculum.

The Postdoctoral Certificate Programs

The following grading system is used: A, excellent; B, good; C, fair, F, failure, YC year course; P, pass.

To be awarded the certificate of training, a candidate must fulfill the following requirements to the satisfaction of the Postdoctoral Committee. The candidate must:

- 1) complete the prescribed courses and any required thesis; students wishing to

- exempted from any of the prescribed courses may request a placement examination in the discipline involved, and the time made available by such exemptions will be planned and supervised by the Program Director for productive utilization;
- 2) pass prescribed written, oral, or practical examinations at the end of the period of residence;
 - 3) attend special courses, when assigned, at hospitals or institutions affiliated with Columbia University but separate from the Medical Center;
 - 4) any postdoctoral student receiving marginal grades in more than one subject in any one academic year may be advanced or promoted only upon special action and recommendation of the Postgraduate Committee; and,
 - 5) satisfy the Postdoctoral Committee that he or she has completed all the specified requirements both clinical and academic for the certificate of training.

Dental Hygiene Programs

The grading system is as follows: A, excellent; B, good; C, fair; D, minimum passing grade; F, failure.

Failure to obtain a passing grade is sufficient reason for asking a student to repeat the course or to resign.

The mark of ABS (authorized absence from an examination) is given by the instructor only with the approval of the Director. If the ABS is not removed by the end of the following term, it will automatically be changed to F.

The mark of INC (incomplete) is given only to a student who has satisfactorily met all but one of the requirements of a course but who has been compelled for reasons beyond control to postpone certain assigned papers or reports. If the INC is not removed by the end of the following term, it will automatically be changed to F.

The School reserves the right to refuse readmission or promotion to any student who is believed for any reason to be unsuited to the conditions of study in the School.

Academic Discipline

The following statement on student discipline is in the Statutes of the University: "The continuance of each student upon the rolls of the University, the receipt by him [or her] of academic credits, his graduation and the conferring of any degree or the granting of any certificate, shall be subject to the disciplinary powers of the University which shall be free to cancel his registration at any time on any grounds it deems advisable."

Honor Code

Academic and intellectual integrity are accepted principles in the dental profession. An Honor Code, created and administered by the student body, is the formal acknowledgment of this understanding at the School of Dental and Oral Surgery. Each dental student is expected to abide by it.

Conduct

All members of the University community, its visitors and guests, are governed by the Rules of University Conduct which apply to all demonstrations, including rallies and picketing, that take place on or at a University facility. It is the student's responsibility to be aware of all provisions, regulations, and procedures contained in the Rules. Copies are available in the Office of the University Senate, 406 Low Memorial Library.

Changes in Programs of Study (Dental Hygiene)

Once registered, a student may drop or add courses or change sections by filing a formal change-of-program application with the Registrar during the change-of-program period each term (see the Academic Calendar). All such changes must first be approved by the student's adviser before submission to the Registrar.

Students may drop courses *after* the change-of-program period by following the same procedure; however, for courses dropped after the last day for change of program in each term, no adjustment of tuition is made. *Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and results in a failing grade in the course.*

Fees

The following fees are prescribed for the D.D.S. program, for each of the postdoctoral programs and the dental hygiene programs. Fees are subject to change at any time at the discretion of the Trustees. Fees for partial programs are assessed by the Registrar as provided by the University statutes. Below are the fees for the 1978-1979 academic year.

For D.D.S. and postdoctoral candidates, the tuition, the student health fee, and the health insurance premium are payable in advance and as part of registration.* (These students may choose to pay tuition in two installments: one-half of the tuition is payable at registration in September and the other half is payable in January.)

For dental hygiene candidates, tuition is payable each term in advance and as part of registration.* The annual health service fee and annual hospital insurance premium are payable at registration in September.†

If these fees are paid after the last day of registration, they will not be reduced, and a late fee of \$10 will be imposed. Checks for tuition and fees should be made payable to Columbia University.

Tuition

Full-time D.D.S. and certificate students, per academic year:	\$5,820.00
Full-time dental hygiene students	
Autumn and spring terms, per term	\$2,260.00
Part-time dental hygiene students, for courses, per point	151.00

Health Service and Hospital Insurance Fees

Full-time D.D.S., dental hygiene, and certificate students per year (September 1-August 31)	
Health Service Fee	\$215.00
Hospital Insurance Premium	143.00

**However, the newly admitted degree or certificate candidate in the School of Dental and Oral Surgery is required by the School, upon acceptance, to submit an acceptance fee to reserve a place in the entering class. This amount is credited toward tuition when the student registers.*

†Candidates for the M.S. degree who are admitted in January pay approximately one-half the annual hospital insurance premium at their first registration.

The student health service fee contributes to the cost of operating the Student Health Service. The hospital insurance fee pays the annual premium of the Associated Hospital Service of New York. Participation in these programs is compulsory for all full-time students; students who already carry hospital insurance, however, will be charged the health service fee only. Part-time students are encouraged to participate in the combined health plan. Upon payment of additional fees, students can acquire hospital insurance for their dependents and the latter are eligible to receive the benefits of the health service program. Students should consult the Student Accounting Division, Black Building, Room 41 for further information on dependent coverage.

The Student Health Service, which holds daily office hours, is on the street level of Bard Haven Tower 1 (60 Haven Avenue).

All entering students are required to have a physical examination at the School of Dental and Oral Surgery Health Service.

Application Fees and Late Fees

Application for admission	\$35.00
For late registration	10.00
For late application (or late renewal of application) for a degree or certificate	10.00

Fees for Repeated Courses

A student who is required to repeat the work for any one year must pay the full tuition and fees. Repeated courses are paid on a per point basis.

Withdrawal and Adjustment of Fees

Students in good academic standing who are not subject to discipline will always be given an honorable discharge if they wish to withdraw from the University. Students who decide to withdraw from the University must notify the Dean and the Registrar at once. Dental Hygiene students who are under twenty-one years of age, their parents or a guardian must first give consent in writing to the Director of the Division of Dental Hygiene.

If a student withdraws from the School, a partial return of the tuition may be authorized by the Registrar. Any adjustment of the tuition that the student has paid is reckoned from the date on which the Registrar receives the student's written notification. Application fees, late fees, and special fees are not subject to rebate. Up to and including the second Saturday after the first date of classes tuition will be retained in the following amount:

Full-time study	\$50.00
Part-time study	25.00

After the second Saturday after the first day of classes in the term, the above amount is retained, plus an additional percentage of the remaining tuition (as indicated in the adjustment schedule), for each week, or part of a week, of the term up to the date on which the student's written notice of withdrawal is received by the Registrar.

Adjustment Schedule

	<i>Minimum Tuition Retained</i>	<i>Percentage of Remaining Tuition Retained</i>
Second Saturday after first day of classes	\$25 or \$50	0
Following week	25 or 50	10
Second following week	25 or 50	20
Third following week	25 or 50	30
Fourth following week	25 or 50	45
Fifth following week	25 or 50	60
Sixth following week	25 or 50	75
Seventh following week	25 or 50	90
Eighth following week	25 or 50	100 (no adjustment)

Application or Renewal of Application for Degrees or Certificates

Degrees and Certificates are awarded three times a year—in October, January and May. A candidate for any Columbia degree or certificate must file an application with the Registrar, Room 138, Black Building, by the date specified in the Academic Calendar. After the dates specified in the Academic Calendar and until the expiration of the *late* filing period for each conferral date a late fee of \$1 will be charged. Applications received *after* the late filing period will automatically be applied to the next conferral date.

If the student fails to earn the degree by the conferral date for which he or she has made application, the student may renew the application. A \$10 late fee will be charged for late filing of renewals of application according to the same schedule as for original applications.

Requests for Transcripts

Transcripts may be requested by writing to the Office of the Registrar, 630 West 168th Street, New York, N.Y. 10032. *Official* transcripts must be sent by the University directly to an official address such as another university, a college, business firm, or a government agency. However, a student may request that an unofficial transcript (stamped "Student Copy") be sent to him or her. There is a charge of \$2 for each transcript requested except those which are sent between offices of Columbia University. Checks accompanying transcript requests should be made payable to Columbia University.

Estimated Expenses**D.D.S. Program**

Books. The approximate cost of books will be: in the first year, \$525; in the second year, \$400; in the third year, \$120; in the fourth year, \$25. Book lists are posted for each class during registration week. Books may be purchased from the Medical Center Bookstore on the first floor of the College of Physicians and Surgeons. The store is maintained expressly for the convenience of the students and staff of the Medical Center schools and hospitals.

Instruments and Supplies. Each student must rent from the University a package of instruments necessary for preclinical and clinical dental instruction. Additional

expendable materials and dental handpieces must be purchased by the student. The estimated cost of purchased and rented materials for students entering in September of 1979 will be approximately \$3,700 over the four-year period. In addition, microscopes are available for rental for those students not owning them during the first year. The microscope rental fee is \$50 a year. Arrangements have been made to spread the \$3,700 fee over the four-year period.

Rented equipment is assigned to students and must be returned. A charge will be made for loss, breakage, and abnormal wear. Variations in this estimated cost may be necessary because of price fluctuations or new developments. These figures are presented as a guide for student planning. Students are asked not to present checks made in advance and based upon these figures. Details will be sent immediately prior to registration.

Microscopes. During the first and second years microscopes are provided by the School for a rental of \$50 a year. If a student prefers to provide his or her own microscope, the student must have it approved by the Department of Anatomy. It is recommended that the microscope be of standard make equipped with: (a) quadruple nose piece; (b) Abbe or variable focus condenser; (c) 4x, 10x, 43x objectives; (d) 96x oil immersion lens; (e) 10x wide field eye piece; (f) mechanical stage; (g) attached lamp; (h) carrying case.

The cost of a new microscope ranges from \$500 to \$750, and of a reconditioned microscope from \$200 to \$500. Arrangements for approval and for purchase or rental should be made before registration for the opening term.

Lockers. Each entering student is assigned a locker; the student must use a combination lock as prescribed by the School.

Postdoctoral Certificate Programs

Since the prices of books and instruments may fluctuate and since it may be necessary for the School to make substitutions because of supply shortages, the figures given below for instruments and books are only approximate.

Program	Tuition (2 years)	Instruments	Books
Endodontics	\$11,640	See note*	\$200
Orthodontics	11,640		260
Periodontics (cerebral palsy)	11,640		160
Periodontics	11,640		220

IMPORTANT: According to Treasury decision 6291, under Section 162 of the 1954 Internal Revenue Code, income tax deductions are allowed in many instances for tuition and other educational expenses. Students are referred to the Federal ruling on income tax deductions for teachers and other professional people seeking to maintain or improve skills in their employment.

Dental Hygiene Programs

In addition to the tuition and fees, approximate first-year costs are:

Room and Board	\$3,000
Books	350
Instruments and equipment	450
Uniforms and accessories	150

Instrument rental will be required for students enrolled for graduate certificates and for dental hygiene degrees. Dental handpieces and expendable supplies must be purchased by the student. A breakdown of purchase and rental responsibilities will be provided prior to registration.

In addition to the tuition and fees given above, approximate second-year costs are:

Room and board	3,000
Books	200
Instruments and equipment	100
Uniforms and accessories	50

Financial Aid

Students may apply for financial aid through the Financial Aid Officer. Grants are awarded only in combination with loans; any student who can demonstrate need is eligible to apply. Application forms are issued by the Financial Aid Office.

Student loans are available on the basis of financial need to full-time Columbia degree candidates to partially cover normal educational and living expenses for the year in which the loan is granted. The University reserves the right to assign the funds from which loans are granted. Students who are United States citizens and residents of states having loan plans are urged to apply to these sources. Federal Health Professions loan funds and National Direct Student Loans are also available. To insure an early decision, applications for all loans should be filed by May 1. Foreign students should be advised that there is limited funding in all programs.

The heavy schedule of the School makes it difficult for D.D.S. students to undertake outside part-time work during the academic year. If at all possible other financial arrangements should be made.

Basic Educational Opportunity Grants (B.E.O.G.)

Undergraduate students enrolled for at least a half-time course of study who have not previously received a Bachelor's Degree are eligible to apply for a grant up to \$1,600 based upon financial need. Applications are available from Basic Grants Department of Health, Education, and Welfare; Office of Education; Washington D.C. 20202.

New York State Tuition Assistance Plan (T.A.P.)

Any student in the D.D.S. degree program or in the Division of Dental Hygiene who has been a legal resident of New York State for the preceding year is eligible for a New York State Tuition Assistance Plan (T.A.P.) award for each term in which he or she is registered as a full-time degree candidate. The amount of this award is based upon the net taxable balance of the student's income and the income of those responsible for his or her support, as reported on the New York State income tax return for the previous calendar year. Further information and application forms can be obtained from the New York State Higher Education Services Corporation, Tower Building, Empire State Plaza, Albany, New York 12223.

**Instrument rental will be required for students enrolled for graduate certificates and for dental hygiene degrees. Dental handpieces and expendable supplies must be purchased by the student. A breakdown of purchase and rental responsibilities will be provided prior to registration.*

Columbia University Loans

Student loans are available to Columbia University degree candidates on the basis of financial need. These funds may be used for tuition, fees, books and supplies, and subsistence. Unusual or excessive personal expenses that fall outside the normal student budget may not be included. Student loans are not intended to cover the entire cost of attending the University but are meant, rather, to supplement a student's own resources.

Columbia University loans are open to full-time degree candidates in any division of the University. However, foreign students with "F" or "J" visas are required to provide a co-maker. A co-maker must be a citizen or permanent resident of the United States who has an income or salary within the United States and who is not an employee of the University.

Repayment of a Columbia University loan must begin when a student ceases to be registered as a full-time degree candidate at the University, and may be extended over a period of ten years, so long as the minimum monthly payment does not fall below \$30.

National Direct Student Loans — Health Professions Loans

These funds are provided through federal legislation. N.D.S.L. loans are provided for degree candidates in the Division of Dental Hygiene and the D.D.S. Program while Health Professions loans are for D.D.S. candidates.

Repayment may be postponed for one year following the date that the student ceases to be registered at Columbia and may be extended over a period of ten years, beginning with the date of first payment.

State Loans

Legal residents of the State of New York and in some cases nonresidents who are degree candidates are eligible to apply for loans guaranteed by the New York Higher Education Assistance Corporation. Other states have similar loan programs. Regardless of parental income these loans are interest free while a student is enrolled in dental school. Further information and application forms can be obtained from the Financial Aid Officer.

Postgraduate Periodontics Student Loan Fund

The David Monahan Postgraduate Periodontics Student Loan Fund is used to help periodontic postgraduate students who are in financial need. No interest will be charged while the student is in the program, but will be applied upon graduation at a low rate. Loans are to be repaid within five years of leaving the program. For further information contact the director of the periodontics program.

The Clark Foundation Scholarships

Several partial scholarship grants are available for applicants for the D.D.S. program and students already in the D.D.S. program. Grants are made on a yearly basis to applicants for students who show evidence of high academic standing, outstanding recommendations, and financial need.

Applications for the scholarship grants must be received no later than April 15. Further information and application forms can be obtained from the Financial Aid Officer.

Honors

D.D.S. Program

Alpha Omega Scholarship Award. A plaque presented to the graduating student (not necessarily an Alpha Omegan) with the highest scholastic average for the four years of dental studies. First awarded in 1949.

American Academy of Oral Medicine. A certificate and a subscription to the *Journal of Oral Medicine*, awarded to a fourth-year student for excellence in this field.

American Academy of Gold Foil Operators. Certificate awarded to a fourth-year student for excellence in gold foil technique.

American Academy of Dental Radiology. A certificate awarded to a fourth-year student for excellence in this field.

American Academy of Periodontology. A student award certificate and a one-year subscription to the journals published by the American Academy of Periodontology, awarded to an outstanding student in periodontics.

American Association of Oral Pathology. A certificate to the graduating student who has shown the most interest, accomplishment, and promise in the field of oral pathology.

American Association of Orthodontists. A certificate awarded to a student showing exceptional interest and special aptitude in orthodontics.

American College of Dentists, New York Section. An award of \$100 and a plaque or scroll. Presented to a third-year student who is a good all-around student, a member of the student section of the American Dental Association, and who exhibits leadership.

American Dental Society of Anesthesiology, Inc. An award certificate and a one-year subscription to *Anesthesia Progress*, awarded to a fourth-year student who has shown outstanding ability or interest in the field of pain control.

American Society of Dentistry for Children. A certificate, one year of membership in the Society, and a one-year subscription to *The Journal of Dentistry for Children*, awarded to a fourth-year student.

Herbert J. Bartelstone Award in Pharmacology. An award given annually to a member of the graduating class of the College of Physicians and Surgeons and a member of the graduating class of the School of Dental and Oral Surgery who have demonstrated exceptional accomplishments in pharmacology.

William Bailey Dunning Award for Excellence in Periodontology. A medal awarded to the graduating student who is the most proficient in periodontology. First awarded in 1957.

Ella Marie Ewell. A medal awarded to the graduating student who is the most proficient in some subject of dentistry.

International College of Dentists, U.S.A. Section. A plaque presented to the graduating student who has shown the most professional growth and development during the years of dental study.

Italian Dental Society Award. An award of \$100 to a graduating student who has demonstrated outstanding scholarship.

ong Island Academy of Odontology. A certificate awarded to a student showing exceptional proficiency in preventive dentistry.

Arthur Merritt Award. A certificate and award of \$50 to the outstanding fourth-year student in periodontics.

Prize for Excellence in Operative Dentistry. A certificate awarded by the staff of the Section of Operative Dentistry to the graduating student who has shown the greatest proficiency in operative dentistry.

Certificate for Excellence in Pedodontics. A plaque awarded to a graduating student for excellence in pedodontics. Established by the Class of 1929.

Phi Omega Fraternity Award. A plaque presented by the Gamma Lambda Chapter to the graduating student who has displayed exemplary professional conduct.

Howe-Wiberg Medal. An award made by the Association of Dental Alumni to the graduating student who has shown the greatest proficiency in prosthetic dentistry.

Van Woert Award. A scholarship given to the senior dental student, at the beginning of the year, who has high scholastic attainment and personal character as well as need for financial assistance.

Women's Auxilliary to the 11th District Dental Society. An award of \$150 to a deserving fourth-year student who is a resident of the Borough of Queens.

Dental Hygiene Program

Clinical Proficiency Award. Awarded by the Dental Hygienists' Association of the City of New York to honor the student who demonstrates the greatest proficiency in the clinical practice of dental hygiene. A certificate and payment of dues to cover one year's membership in the American Dental Hygienists' Association and its component and constituent associations is provided annually.

Gamma Phi Alpha, Lambda Chapter. Sigma Phi Alpha is a National Honor Society established in schools of dental hygiene to recognize scholarship, service, and character among students. Membership is awarded to the top 10 percent of the graduating class, based on scholastic standing and leadership potential.

The Albert H. Stevenson Medal. Awarded by the Dental Society of the State of New York to an honor student from each of the dental hygiene schools in the State. It commemorates the interest and work of Dr. Stevenson in the field of dental hygiene.

The F. J. Swanson Medal. Awarded since 1920 by Dr. F. J. Swanson to the student who demonstrates excellence in theory and practice.

Living Arrangements

On the University Campuses

The University provides housing for undergraduate and graduate men and women who are regularly registered either for an approved program of full-time academic work or for work being done on a doctoral dissertation. The rates below are for the academic year 1978-1979.

Morningside Campus

Rates in the residence halls (Harmony, Hogan, Johnson, River, and Ruggles) for single and double rooms average \$1,125 per person for the autumn and spring terms. Meals are available in the John Jay or Johnson Hall dining rooms on weekdays when classes are in session. These may be paid for in cash or through subscription to a board plan. Inquiries should be directed as early as possible to the Residence Halls Office, 125 Livingston Hall, Columbia University, New York, N.Y. 10027.

Medical Center

Eli B. White Memorial Residence Hall, located at 419 West 114th Street, and Anna Maxwell Hall, located at 179 Fort Washington Avenue, are residences of the School of Nursing, but rooms are also available to men and women (primarily undergraduates) registered in other full-time programs at the Medical Center. Each student occupies a single room. Assignment of rooms is for the term. The room charge for the academic year, September through May, is \$1,200, half of which is payable each term at registration. There is an optional board plan. Apply directly to the Director of Student Affairs, School of Nursing, Columbia University, 179 Fort Washington Avenue, New York, N.Y. 10032.

Bard Hall is the residence for students in the College of Physicians and Surgeons, but rooms are also available to unmarried dental students. Several floors are reserved for women students. The facilities of the Hall include lounges, dining room and grill, and a swimming pool and gymnasium. The rate for a room is about \$115 per month, including breakfast on weekdays on which the cafeteria is open. Breakfast is not served on holidays or during the regular academic vacation periods of the College of Physicians and Surgeons. A full-board plan for September to June is available. Applications should be submitted as early as possible. Applications and further information will be furnished on request by the Bard Hall Office, 50 Haven Avenue, New York, N.Y. 10032.

Housing for students is available to Bard Haven, 100 Haven Avenue, New York, N.Y. 10032, near the Medical Center. Apartments are air-conditioned and unfurnished. Twenty-four hour doorman service is provided. Students are urged to apply for an apartment as soon as they apply for admission to the program, as apartments are limited. Requests for further information and application forms should be directed to the Housing Office, 100 Haven Avenue, New York, N.Y. 10032.

Off Campus

Students under twenty-one years of age who wish to live off campus must have the written consent of parents or guardian sent to the Office of the Director.

Students who wish to live in furnished rooms or apartments off campus must consult the Columbia University Registry of Off-Campus Accommodations, 125 Livingston Hall, New York, N.Y. 10027, for information.

International House, a privately owned student residence near the Morningside campus, has accommodations for about five hundred graduate students, both foreign and American. Rates ranged from \$141 to \$181 a month during the 1978-1979 academic year and are expected to increase by approximately 10 percent for the 1979-1980 academic year. These rates include linen and maid service, membership and program fees, and the basic cost of a food plan enabling residents to pay special low prices for food. A cafeteria, recreational facilities, and a varied program are available to members. To be eligible for admission, a student must be at least twenty-one years old and must be registered for at least 12 points, or for a program of full-time research. Inquiries should be addressed to the Committee on Admissions, International House, 500 Riverside Drive, New York, N.Y. 10027.

Student Organizations and Activities

Student Council

In accordance with the plan for all schools in the University, the students are organized under a Student Government Association. Through this organization the students have representation on the Columbia University Student Council, and are eligible for participation in the many activities at the Medical Center and on the Morningside campus.

Omicron Kappa Upsilon

Omicron Epsilon chapter of Omicron Kappa Upsilon, national honorary fraternity, was chartered in the School of Dental and Oral Surgery in 1934. The purpose of the fraternity is to recognize and honor a maximum of 12 percent of the members of the graduating D.D.S. class on the basis of scholarship, character, and potential for further professional growth and attainments.

The William Jarvie Society

The William Jarvie Society for Dental Research is a nonsecret, dental honor society, membership in which is based on scholarship and interest in dental research, and for which second-, third-, and fourth-year D.D.S. students are eligible. The society was organized in the School of Dental and Oral Surgery in 1920 and named after Dr. William Jarvie because of his wide interest in the promotion of dental research. The society aims to promote the spirit of research among the students.

The Student Dental Association

The Student Dental Association of Columbia University was established in 1960 to provide a professional and social forum in which D.D.S. candidates would participate. The general program of this organization is patterned after the program of local dental societies, in which the graduate dentist contributes to the organized dental profession. Undergraduate dental students are exposed to the democratic process of organization function, policy development, and programming as they meet their responsibilities for supporting the program of their association.

Student American Dental Hygienists' Association

All students in the Division of Dental Hygiene belong to this association, which meets monthly. The purpose is to foster an interest in the work of the American Dental Hygienists' Association and to prepare students for admission after graduation to full and active membership in the professional organizations.

Foreign Students

The staff of the Office of the Foreign Student Adviser on the Morningside Campus provides advice and counseling to foreign students on such matters as housing, personal and financial problems, and regulations of the United States Immigration and Naturalization Service (visas, extensions to stay, work permission, temporary

departure from the United States, transfer from Columbia to another school (termination of study). Information about the various foreign student clubs at Columbia and about opportunities to attend conferences, travel in the United States, and participation in community and cultural activities can be obtained from this office. Maps of New York City and discount tickets to concerts and plays are available.

The staff of the Office of Foreign Student Admissions provides information and counseling on University admission, advanced standing, English proficiency examinations, and academic placement.

Postdoctoral Programs

Student organizations in the postdoctoral disciplines are open to membership. The Program Director should be contacted for additional information.

License to Practice

Dentistry

Successful performances in Parts I and II of the examinations given by the Council of the National Board of Dental Examiners are preliminary requirements for licensure in most states of the United States, including New York.

Those seeking licensure solely in New York State may take the final or clinical examinations offered by the Board of Dental Examiners of the State of New York. Successful completion of these examinations entitles the applicant to licensure, assuming the prerequisites of good moral character, citizenship, or declaration of intention of becoming a citizen, are fulfilled. For additional information request a copy of Handbook 10, *Professional Education*, from the Division of Professional Licensing Services, New York State Department of Education, Albany, N.Y. 12201.

It is advisable, however, that candidates for licensure take the clinical examinations offered by the North East Regional Board of Dental Examiners, the content and format of which are identical to those of New York State. Successful completion of these examinations, together with fulfillment of such minor prerequisites as may be required by individual states, permits licensure in the states of Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia, and the District of Columbia, as well as New York State.

Additional information, including applications, format of examinations, and examination schedules are available from the North East Regional Board of Dental Examiners, 4645 Deane Avenue N.E., Washington, D.C. 20019.

Dental Hygiene

Graduates of the Division of Dental Hygiene are qualified to take all state and national board examinations.

Officers of Instruction

Anatomy

CHAIRMAN: Professor Michael D. Gershon

ERNEST W. APRIL. *Associate Professor of Anatomy*
S., Tufts, 1961; Ph.D., Columbia, 1969

HILIP W. BRANDT. *Associate Professor of Anatomy*
A., Swarthmore, 1952; M.S., Pennsylvania, 1957; Ph.D., Columbia, 1960

ERLINE D. DEITCH. *Associate Professor of Clinical Pathology (in Anatomy)*
A., Brooklyn, 1944; M.A., Columbia, 1946; Ph.D., 1954

HARLES A. ELY. *Professor of Anatomy*
A., Washington and Jefferson, 1936; M.S., Hawaii, 1940; Ph.D., Wisconsin, 1948

ICHAEL D. GERSHON. *Professor of Anatomy*
A., Cornell, 1958; M.D., 1963

JAMES P. KELLY. *Assistant Professor of Anatomy*
A., Harpur, 1966; Ph.D., Washington (St. Louis), 1971

ANIEL M. LINKIE. *Assistant Professor of Anatomy (in Obstetrics and Gynecology)*
S., State University of New York (Downstate), 1962; M.S., 1963; Ph.D., Michigan, 1971.

ARIE-FRANCE MAYLIE-PFENNINGER. *Assistant Professor of Anatomy*
ic.Sci., Marseilles, 1963; Dr. Spécialité (Biochemistry), 1967; Ph.D., 1972

ELVIN L. MOSS. *Professor of Anatomy and Professor of Dentistry*
A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

ETTY MOSS-SALENTIJN. *Associate Professor of Dentistry (Oral Biology)*
D.S., Utrecht, 1967; Ph.D., 1976

HARLES R. NOBACK. *Professor of Anatomy*
S., Cornell, 1936; M.S., New York University, 1938; Ph.D., Minnesota, 1942

LADIO A. NUNEZ. *Associate Professor of Anatomy*
S., St. John's (New York), 1951; M.S., 1953; Ph.D., New York University, 1964

ARL H. PFENNINGER. *Associate Professor of Anatomy*
I.D., Zurich, 1971

NN-JUDITH SILVERMAN. *Assistant Professor of Anatomy*
A., California (Los Angeles), 1967; Ph.D., 1970

IRGINIA M. TENNYSON. *Professor of Anatomy and Pathology*
S., Pennsylvania State, 1946; M.S., Baylor, 1956; Ph.D., Columbia, 1960

Anesthesiology

CHAIRMAN: Professor Henrik H. Bendixen

HENRIK H. BENDIXEN. *Professor of Anesthesiology*
M.D., Copenhagen, 1951

LESTER C. MARK. *Professor of Anesthesiology*
M.D., Toronto, 1941

S. H. NGAI. *Professor of Anesthesiology*
M.B., National Central (China), 1944

Biochemistry

CHAIRMAN: Professor Isidore S. Edelman

RICHARD AXEL. *Professor of Biochemistry and Pathology*
B.A., Columbia, 1967; M.D., Johns Hopkins, 1970

REINHOLD BENESCH. *Professor of Biochemistry*
B.Sc., Leeds, 1941; M.Sc., 1945; Ph.D., Northwestern, 1950

RUTH E. BENESCH. *Associate Professor of Biochemistry*
B.Sc., London, 1946; Ph.D., Northwestern, 1951

ISIDORE S. EDELMAN. *Robert Wood Johnson, Jr., Professor of Biochemistry*
B.A., Indiana, 1941; M.D., 1944

MAX A. EISENBERG. *Professor of Biochemistry*
B.A., Brooklyn, 1938; M.S., New York University, 1941; Ph.D., Duke, 1950

PHILIP FEIGELSON. *Professor of Biochemistry (assigned to Cancer Research)*
B.S., Queens (New York) 1947; Ph.D., Wisconsin, 1951

ALLEN M. GOLD. *Associate Professor of Biochemistry*
B.A., Chicago, 1950; Ph.D., Harvard, 1955

DEZIDER GRUNBERGER. *Associate Professor of Biochemistry (assigned to Cancer Research)*
M.Sc., Technical University (Prague), 1950; Ph.D., Czechoslovak Academy of Sciences, 1956; Sc.D., 1968

ARTHUR KARLIN. *Professor of Biochemistry and Neurology*
B.A., Swarthmore, 1957; Ph.D., Rockefeller, 1962

ALVIN I. KRASNA. *Professor of Biochemistry*
B.A., Yeshiva, 1950; Ph.D., Columbia, 1955

SEYMOUR LIEBERMAN. *Professor of Biochemistry (assigned to Obstetrics and Gynecology)*
B.S., Brooklyn, 1936; M.S., Illinois, 1937; Ph.D., Stanford, 1941

BARBARA W. LOW. *Professor of Biochemistry*
B.A., Oxford, 1942; M.A., 1946; D.Phil., 1948

MAURICE RAPPORT. *Professor of Biochemistry (assigned to Psychiatry)*
B.S., College of the City of New York, 1940; Ph.D., California Institute of Technology, 1946

SPIEGELMAN. *University Professor (Director of the Institute of Cancer Research) (also Human Genetics)*
 College of the City of New York, 1939; M.S., Columbia, 1942; Ph.D.,
 Washington (St. Louis), 1944

THYCHERY R. SRINIVASAN. *Professor of Biochemistry*
 , Madras, 1946; Ph.D., 1953

tal and Oral Surgery

IRMAN: Professor Allan J. Formicola

munity Health

CTOR: Professor Harriet S. Goldman

VIN F. BRAVERMAN. *Assistant Clinical Professor of Dentistry*
 D., Pennsylvania, 1966

ALD P. BURAKOFF. *Adjunct Professor of Dentistry*
 , McGill, 1969; D.M.D., Tufts, 1973; M.P.H., North Carolina, 1974

IARD B. CHANIN. *Adjunct Assistant Professor of Dentistry*
 D., Pennsylvania, 1973; M.B.A., 1974

L A. DEMBY. *Associate Clinical Professor of Dentistry*
 Rutgers, 1964; D.M.D., Pennsylvania, 1968

LLIS A. DETWILER. *Adjunct Assistant Professor of Dentistry*
 Goshen (Indiana), 1969; D.M.D., Harvard, 1976

RGE M. GLUCK. *Adjunct Assistant Professor of Dentistry*
 Queens, 1959; D.D.S., New York University, 1964; M.P.H., Columbia,
 ; M.B.A, Fairleigh Dickinson, 1974

REY GOLD. *Assistant Clinical Professor of Dentistry*
 Brooklyn, 1965; D.D.S., New York University, 1969

HUR D. GOLDMAN. *Adjunct Assistant Professor of Dentistry*
 D., Tufts, 1957

RIET S. GOLDMAN. *Assistant Professor of Dentistry*
 New York University, 1962; D.D.S., 1965; M.P.H., Columbia, 1966

TON O. HOSANNAH. *Assistant Clinical Professor of Dentistry*
 Howard, 1952; D.D.S., 1958; M.P.H., Columbia, 1970

N E. JOSEY. *Adjunct Assistant Professor of Dentistry*
 Howard, 1954; D.D.S., 1960

REW W. KRIEGER. *Adjunct Assistant Professor of Dentistry*
 , City College, 1972; D.D.S., Columbia, 1976

RTIN LOWY. *Adjunct Assistant Professor of Dentistry*
 Brooklyn, 1962; M.B.A. (H.A.), Wagner, 1973

ES E. McINTOSH. *Adjunct Assistant Professor of Dentistry*
 , Missouri, 1965; D.D.S., Meharry, 1969; M.P.H., Columbia, 1975

VIN N. RASKIN. *Adjunct Assistant Professor of Dentistry*
 New Hampshire, 1938; D.M.D., Tufts, 1943

IONA I. SABEV-NIKOW. *Adjunct Assistant Professor of Dentistry*
D.D.S., Howard, 1968; M.P.H., Columbia, 1971

WILLIAM R. SMITHEA. *Assistant Clinical Professor of Dentistry*
D.D.S., Howard, 1959

DAVID A. SORICELLI. *Adjunct Professor of Dentistry*
D.D.S., Temple, 1955; M.P.H., Harvard, 1958

CARLTON A. SPARKS. *Adjunct Associate Professor of Dentistry*
B.S., Tennessee State, 1942; D.D.S., Howard, 1949; M.P.H., Columbia, 19

WILLIAM STEIBEL. *Adjunct Associate Professor of Dentistry*
D.D.S., New York University, 1947; M.P.H., Columbia, 1969

DOLORES M. FRANKLIN SUGGS. *Assistant Clinical Professor of Dentistry*
B.A., Barnard, 1970; D.M.D., Harvard, 1974; M.P.H., Columbia, 1974

BERNARD A. SUTHERLAND. *Adjunct Assistant Professor of Dentistry*
B.A., B.Sc., Atlantic Union, 1958; D.D.S., Howard, 1963; M.P.H., Michigan, 1974

PETER B. TERENCE. *Professor of Clinical Dentistry (at Roosevelt Hospital)*
L.L.B., Connecticut, 1940; M.H.A., Northwestern, 1950

BURTON S. WASSERMAN. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1953; D.D.S., 1957

BARRY M. WEINBERG. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1956; D.D.S., New York University,

LOUIS F. WEISKOPF. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1968; D.D.S., Columbia, 1972

Dental Auxiliary Utilization

DIRECTOR: Professor David Kaplan

S. GERALD CARDINALE. *Assistant Clinical Professor of Dentistry*
B.S., St. John's (New York), 1955; D.D.S., New York University, 1959

IRWIN DAMBROT. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1950; D.D.S., Columbia, 1955

PAUL DUBOFF. *Associate Clinical Professor of Dentistry*
B.S., Rutgers, 1952; D.D.S., Columbia, 1956

STEPHANIE A. FINTEL. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1955

MARTIN HANDLERS. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1945

ABRAHAM J. KADISH. *Assistant Clinical Professor of Dentistry*
B.S., Rutgers, 1960; D.M.D., Pennsylvania, 1965

JOSEPH E. KAHER. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1943; D.M.D., Pittsburgh, 1946

DAVID KAPLAN. *Associate Professor of Dentistry*
B.S., College of the City of New York, 1958; D.D.S., New York University,

CHRIS S. KIRSCHNER. *Assistant Clinical Professor of Dentistry*
 , College of the City of New York, 1937; D.M.D., Louisville, 1941

THEW D. LEVIN. *Clinical Professor of Dentistry*
 S., Columbia, 1926

GENE M. LEVINE. *Assistant Clinical Professor of Dentistry*
 D., Tufts, 1950

WARD M. ROMBOM. *Assistant Professor of Dentistry*
 , New York University, 1973; M.A., Hofstra, 1975; Ph.D., 1976

ISTOPHER A. STARR. *Assistant Professor of Dentistry*
 , Notre Dame, 1970; D.D.S., State University of New York (Buffalo), 1974

ERT J. THOMPSON. *Assistant Clinical Professor of Dentistry*
 , Columbia, 1954; D.D.S., 1960

NARD B. TOLPIN. *Assistant Professor of Dentistry*
 , Michigan, 1956; D.D.S., Columbia, 1960

IL D. WEINER. *Assistant Clinical Professor of Dentistry*
 , New York University, 1950; D.D.S., Temple, 1955

Dental Hygiene

ECTOR: Professor Dona E. Wayman

ITH L. GOODRICH. *Assistant Professor of Dentistry*
 , Loma Linda, 1967; M.S., Columbia (Teachers College), 1977

GA A. IBSEN. *Assistant Clinical Professor of Dentistry*
 S., State University of New York (Farmingdale), 1970; B.S., Columbia, 1972;
 , 1975

RENE KLYVERT. *Assistant Professor of Dentistry*
 , Columbia, 1971; M.S., 1972

NALD B. ODRICH. *Adjunct Assistant Professor of Dentistry*
 , Queens, 1958; D.D.S., Columbia, 1959

NA E. WAYMAN. *Associate Professor of Dentistry*
 , Columbia, 1971; M.S., 1972; Ed.D., 1978

Education and Behavioral Science

WEISS. *Assistant Clinical Professor of Dentistry*
 , Harvard, 1948; D.M.D., Tufts, 1952

PHEN WOTMAN. *Associate Professor of Dentistry*
 S., Pennsylvania, 1956

LIP YABLON. *Assistant Clinical Professor of Dentistry*
 , City University of New York, 1955; D.D.S., Columbia, 1959; M.P.H., 1973

Odontics

ECTOR: Professor Joseph M. Leavitt

BERT L. AMBINDER. *Assistant Clinical Professor of Dentistry*
 , College of the City of New York, 1955; D.D.S., New York University, 1961

GERALD H. BESEN. *Associate Clinical Professor of Dentistry*
D.D.S., Minnesota, 1947

WINSTON WEN-JONG CHEN. *Assistant Clinical Professor of Dentistry*
D.D.S., National Taiwan University, 1966; Ph.D., Minnesota, 1974; D.D.S., 1977

GERALD M. DREW. *Assistant Clinical Professor of Dentistry*
B.A., Pennsylvania, 1944; D.D.S., Michigan, 1948

MARVIN FIRDMAN. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1948; D.D.S., Columbia, 1952

IRVING L. FRIED. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1951; M.A., 1953; D.D.S., New York University, 1957

FREDRIC E. GOODMAN. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1962

BENJAMIN B. GOULD. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1938

EDWARD GREENFIELD. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., New York University, 1957

JOSEPH M. LEAVITT. *Clinical Professor of Dentistry*
B.S., Oklahoma, 1936; D.D.S., Columbia, 1940

JACK LEVI. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1960; D.D.S., New York University, 1963

MICHAEL D. LUND. *Assistant Clinical Professor of Dentistry*
D.D.S., Minnesota, 1969; M.S.D., University of Washington, 1975

S. ABEL MOREINIS. *Clinical Professor of Dentistry*
D.D.S., Michigan, 1948

IRVING J. NAIDORF. *Professor of Clinical Dentistry*
B.A., New York University, 1937; D.D.S., Columbia, 1941

FRED ROTHENBERG. *Clinical Professor of Dentistry*
D.M.D., Goettingen, 1935; D.D.S., Pennsylvania, 1937

JEFFREY S. SENZER. *Assistant Clinical Professor of Dentistry*
B.A., Hunter, 1964; M.A., Brooklyn, 1967; D.D.S., Columbia, 1973

CHARLES S. SOLOMON. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

At St. Luke's Hospital:

STANLEY B. CHESTNER. *Assistant Clinical Professor of Dentistry*
B.A., Wesleyan, 1943; D.D.S., Pennsylvania, 1946

Operative Dentistry

DIRECTOR: Professor Edward A. Cain, Jr.

ROY BOELSTLER. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1956; D.D.S., 1959

ALVIN T. BOYD. *Assistant Clinical Professor of Dentistry*
B.A., Lafayette, 1967; D.M.D., Pennsylvania, 1971

- NISLAW H. BRZUSTOWICZ. *Professor of Clinical Dentistry*
St. John's, 1940; D.D.S., Columbia, 1943
- JARD A. CAIN, JR. *Professor of Dentistry*
Fordham, 1942; D.D.S., Columbia, 1945
- DELIS CAMESAS. *Assistant Clinical Professor of Dentistry*
College of the City of New York, 1949; D.D.S., Columbia, 1953
- NETH C. DEESEN. *Associate Clinical Professor of Dentistry*
S., Columbia, 1948
- BERT P. FRITZ. *Associate Clinical Professor of Dentistry*
New York University, 1933; D.D.S., Columbia, 1936
- HARD A. GREENBERG. *Assistant Clinical Professor of Dentistry*
Vermont, 1963; D.D.S., Columbia, 1968
- TER A. GUTSTEIN. *Assistant Clinical Professor of Dentistry*
Knox, 1954; D.D.S., Columbia, 1958
- SLEY HALPERT. *Clinical Professor of Dentistry*
College of the City of New York, 1943; D.D.S., Columbia, 1946
- HARD M. LICHTENTHAL. *Assistant Clinical Professor of Dentistry*
Muhlenberg, 1958; D.D.S., Columbia, 1962
- ANK L. MELLANA. *Associate Clinical Professor of Dentistry*
Fordham, 1956; D.D.S., Columbia, 1962
- ANK W. PANDOLFO. *Associate Clinical Professor of Dentistry*
Queens, 1962; D.D.S., Columbia, 1966
- EPH A. PIANPIANO. *Assistant Clinical Professor of Dentistry*
Fordham, 1958; D.D.S., Columbia, 1962
- ORGE RUDENSKY. *Associate Clinical Professor of Dentistry*
S., Columbia, 1958
- NLEY R. SADLES. *Assistant Clinical Professor of Dentistry*
Columbia, 1949; D.D.S., 1953
- GER P. SANTISE. *Assistant Clinical Professor of Dentistry*
Manhattan, 1966; D.D.S., Columbia, 1970
- VEN S. SCRIVANI. *Professor of Clinical Dentistry*
S., Columbia, 1948
- LIAM H. SILVERSTEIN. *Associate Clinical Professor of Dentistry*
S., Maryland, 1937

I Biology

ECTOR: Professor Solon A. Ellison

ON A. ELLISON. *Professor of Dentistry*
College of the City of New York, 1942; D.D.S., Columbia, 1946; Ph.D.
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RMAN KAHN. *Associate Professor of Pharmacology and of Dentistry*
S., Columbia, 1954; D.D.S., 1958; Ph.D., 1964

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D.D.S., Columbia, 1948

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B.A., Adelphi, 1966; D.D.S., Columbia, 1970; M.D., Mt. Sinai (New York), 1971

KOURKEN A. DAGLIAN. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., Columbia, 1943

ANTHONY L. DI MANGO. *Associate Clinical Professor of Dentistry*
D.D.S., Georgetown, 1953

IAN Y. HU. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1954

MARK H. JAFFE. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1969; D.D.S., Columbia, 1973

BERTRAM KLATSKIN. *Clinical Professor of Dentistry*
B.A., Cornell, 1937; D.D.S., Columbia, 1941

LOUIS J. LOSCALZO. *Clinical Professor of Dentistry*
B.A., Fordham, 1942; D.D.S., Temple, 1946

LOUIS MANDEL. *Clinical Professor of Dentistry*
B.A., New York University, 1943; D.D.S., Columbia, 1946

GEORGE A. MINERVINI. *Clinical Professor of Dentistry*
B.A., Columbia, 1942; D.D.S., 1946

GEORGE L. O'GRADY. *Clinical Professor of Dentistry*
B.A., Fordham, 1929; D.D.S., Columbia, 1934

HERBERT RABINOWITZ. *Assistant Clinical Professor of Dentistry*
D.D.S., Pittsburgh, 1943

DANIEL D. SCHUBE. *Associate Clinical Professor of Dentistry*
B.A., Brooklyn, 1945; D.D.S., New York University, 1949

BOAZ M. SHATTAN. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1940; D.D.S., 1943

MORTON JAY STERN. *Associate Clinical Professor of Dentistry*
B.A., Upsala, 1949; D.D.S., Temple, 1953

MORTON A. WINNER. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1959; D.D.S., Columbia, 1963

At Harlem Hospital:

ARTHUR C. WILLIAMS. *Associate Professor of Clinical Dentistry*
B.S., Howard, 1938; D.D.S., 1942; M.P.H., Harvard, 1945; M.S., New York University, 1959

J. HAMIL WILLOUGHBY. *Assistant Professor of Clinical Dentistry*
B.S., City College, 1962; D.D.S., Howard, 1966

At Roosevelt Hospital:

EDWARD B. ARMSTRONG. *Associate Clinical Professor of Dentistry*
B.A., Pennsylvania, 1950; D.D.S., New York University, 1954

ERALD E. LEDERMAN. *Assistant Clinical Professor of Dentistry*
S., Columbia, 1960; D.D.S., 1964

NDREW M. LINZ. *Professor of Clinical Dentistry*
D.S., Pennsylvania, 1948; M.Sc. (Dent.), 1953

St. Luke's Hospital:

ROME T. FRIEDMAN. *Clinical Professor of Dentistry*
A., Miami University (Ohio), 1956; D.D.S., Ohio State, 1961

CHARD H. SAND. *Assistant Clinical Professor of Dentistry*
A., Brooklyn, 1955; D.D.S., New York University, 1959

rofacial Growth and Development

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RLINDA A. BENEDICTO. *Assistant Clinical Professor of Dentistry*
M.D., University of the East (Philippines), 1962

ARK S. COHEN. *Assistant Clinical Professor of Dentistry*
S., College of the City of New York, 1971; D.D.S., Columbia, 1975

LBERT GREEN. *Associate Clinical Professor of Dentistry*
A., Temple, 1950; D.D.S., Pennsylvania, 1954

DNEY L. HOROWITZ. *Professor of Dentistry*
S., Columbia, 1942; D.D.S., New York University, 1945

ARVIN B. KING. *Associate Clinical Professor of Dentistry*
D.S., New York University, 1954

GEORGE C. KIRIAKOPOULOS. *Associate Clinical Professor of Dentistry*
A., Brooklyn, 1950; D.D.S., Columbia, 1954

ARLENE KLYVERT. *Assistant Professor of Dentistry*
S., Columbia, 1971; M.S., 1972

MARY L. LIGHTER. *Assistant Clinical Professor of Dentistry*
A., State University of New York (Buffalo), 1965; D.M.D., Pennsylvania, 1969

ELVIN L. MOSS. *Professor of Anatomy and of Dentistry*
A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

ETTY MOSS-SALENTIJN. *Associate Professor of Dentistry*
D.S., Utrecht, 1967; Ph.D., 1976

ERBERT P. OSTREICHER. *Assistant Clinical Professor of Dentistry*
A., Columbia, 1943; D.D.S., 1945

THEODORE REBICH, JR. *Associate Clinical Professor of Dentistry*
A., Washington and Jefferson, 1966; D.M.D., Pittsburgh, 1970; Ph.D., 1974;
P.H., 1977

ERNARD M. RIKLIN. *Associate Clinical Professor of Dentistry*
IS., Illinois, 1943; D.D.S., 1944

MATTHEW A. ROCCO. *Assistant Clinical Professor of Dentistry*
A., Seton Hall, 1955; D.D.S., Maryland, 1959

LAWRENCE R. SIEGEL. *Adjunct Assistant Professor of Dentistry*
A., Upsala, 1963; D.D.S., Temple, 1967

Orthodontics

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LAWRENCE W. BERGMANN. *Adjunct Assistant Professor of Dentistry*
B.A., Colgate, 1951; D.D.S., Georgetown, 1958

ABRAHAM M. BLECHMAN. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1945; D.D.S., 1948

MARINO A. BRAMANTE. *Associate Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1957

THOMAS J. CANGIALOSI. *Assistant Clinical Professor of Dentistry*
D.D.S., Georgetown, 1959

NICHOLAS A. DI SALVO. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945; Ph.D. 1952

MONROE M. GLIEDMAN. *Associate Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

RICHARD GLIEDMAN. *Associate Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

ROBERT J. HUETTNER. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1949; D.D.S., Michigan, 1949; M.S., 1950

ROBERT J. ISAACSON. *Assistant Clinical Professor of Dentistry*
B.S., Rutgers, 1953; M.S., 1954; D.D.S., Columbia, 1958

VIKTORIA I. KOHLER. *Assistant Professor of Dentistry*
D.D.S., Faculdade de Odontologia de Sao Jose dos Campos (Brazil), 1966

GUSTAVE LASOFF. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1940; D.D.S., Medical College of Virginia, 1944

MELVYN M. LEIFERT. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1963; D.D.S., State University of New York (Buffalo), 1967

MALCOLM E. MEISTRELL, JR. *Assistant Clinical Professor of Dentistry*
B.A., Princeton, 1960; D.D.S., Michigan, 1964

HENRY I. NAHOUM. *Professor of Dentistry*
B.A., Brooklyn, 1940; D.D.S., Columbia, 1943

ARMAND M. OPPENHEIMER. *Clinical Professor of Dentistry*
B.A., College of the City of New York, 1926; B.S., Columbia, 1927; D.D.S. 1929

JULIUS D. TARSHIS. *Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1949

ISABEL T. WHITEHILL-GRAYSON. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1954; M.S., 1957; D.D.S., 1961

ALBERT N. ZENGO. *Associate Clinical Professor of Dentistry*
B.S., Tufts, 1959; D.D.S., Columbia, 1964

ction of Special Dental Services:

JOSEPH LUBAN. *Associate Clinical Professor of Dentistry*
S. College of the City of New York, 1938; D.D.S., Columbia, 1942

ododontics

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A., Yeshiva, 1957; D.D.A., New York University, 1961

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A., New York University, 1968; D.D.S., Columbia, 1976

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A., Yale, 1970; D.D.S., Columbia, 1974

WARD D. DIMOND, JR. *Assistant Clinical Professor of Dentistry*
A., University of Pennsylvania, 1971; D.M.D., 1975

BERT I. FRIEDER. *Assistant Clinical Professor of Dentistry*
S., Kent State, 1951; D.D.S., New York University, 1954

AL HAMMER. *Assistant Clinical Professor of Dentistry*
D.S., Columbia, 1976

EVEN M. KLEIN. *Assistant Clinical Professor of Dentistry*
S., Pittsburgh, 1973; D.D.S., Columbia, 1977

YMOUR KOSTER. *Associate Clinical Professor of Dentistry*
A., New York University, 1945; D.D.S., 1949

BERT A. KOWEEK. *Assistant Clinical Professor of Dentistry*
A., Rochester, 1965; D.M.D., Tufts, 1968

JOSEPH M. McMANUS, JR. *Assistant Clinical Professor of Dentistry*
A., Holy Cross, 1968; D.M.D., Pennsylvania, 1972

UY D. METCALF. *Assistant Clinical Professor of Dentistry*
A., Clark, 1970; D.D.S., Columbia, 1975

FRED J. MEZZA. *Assistant Clinical Professor of Dentistry*
A., New York University, 1959; D.D.S., Fairleigh Dickinson, 1963

WARD J. PIESMAN. *Assistant Clinical Professor of Dentistry*
A., Queens, 1966; D.M.D., Pennsylvania, 1970

ERBARA B. ROCCO. *Assistant Clinical Professor of Dentistry*
A., Syracuse, 1956; D.D.S., Maryland, 1959

NOLD ROSENBERG. *Clinical Professor of Dentistry*
B., New York University, 1943; D.D.S., 1945

NIEL SILFEN. *Assistant Clinical Professor of Dentistry*
A., Pennsylvania, 1942; D.D.S., 1945

Roosevelt Hospital:

LLIAN H. BACHMAN. *Assistant Clinical Professor of Dentistry*
S., Queens, 1959; D.D.S., Columbia, 1963; M.A., 1967

Periodontics

DIRECTOR; Professor Robert Gottsegen.

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B.A., Cornell, 1966; D.M.D., Harvard, 1970

BARRY L. BEHRENS. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn College of Pharmacy, 1965; D.D.S., Medical College of Virginia, 1969

FRANK E. BEUBE. *Clinical Professor of Dentistry*
L.D.S., D.D.S., Toronto, 1930

ROBERT L. BLAIR. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1965; D.D.S., Temple, 1969

JOSEPH J. BOSCARINO. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1971

HERMAN CANTOR. *Associate Clinical Professor of Dentistry*
B.S., New York University, 1934; D.D.S., 1937

ALVIN D. CEDERBAUM. *Associate Clinical Professor of Dentistry*
D.M.D., Tufts, 1939

RAYMOND Z. DARAKJIAN. *Associate Clinical Professor of Dentistry*
D.D.S., Fairleigh Dickinson, 1968

DANIEL H. FINE. *Associate Professor of Dentistry*
B.S., Queens, 1962; D.M.D., Pennsylvania, 1965

ALLAN J. FORMICOLA. *Professor of Dentistry*
D.D.S., Georgetown, 1963; M.S., 1965

ARNOLD M. GEIGER. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1938; D.D.S., Pennsylvania, 1941

STEVEN I. GOLD. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1966

ROBERT GOTTSEGEN. *Professor of Dentistry*
B.A., Michigan, 1939; D.D.S., Columbia, 1943

LEONARD S. HIRSCHFELD. *Clinical Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944

RAYMOND F. JOHNSON, JR. *Associate Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1952

IRVING A. KAREL. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1951

JOEL S. KLEIMAN. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1968; D.D.S., Columbia, 1971

ALAN LUBARR. *Assistant Clinical Professor of Dentistry*
B.A., Yeshiva, 1964; D.M.D., Pennsylvania, 1968

DOUGLAS L. MARION. *Assistant Clinical Professor of Dentistry*
B.A., Susquehanna, 1970; D.D.S., Georgetown, 1974

LVIN L. MORRIS. *Clinical Professor of Dentistry*
 ., College of the City of New York, 1934; M.A., Columbia, 1937; D.D.S.,
 11

RNARD S. MOSKOW. *Associate Clinical Professor of Dentistry*
 D.S., Temple, 1954; M.Sc.D., Pennsylvania, 1958

GINIA KLUTE MURRAY. *Assistant Clinical Professor of Dentistry*
 M.D., Fairleigh Dickinson, 1971

BERT SALKIND. *Clinical Professor of Dentistry*
 D.S., Marquette, 1943

HAEL B. SAVIN. *Assistant Clinical Professor of Dentistry*
 ., Rochester, 1961; D.M.D., Pennsylvania, 1965

RRAY SCHWARTZ. *Clinical Professor of Dentistry*
 ., New York University, 1950; D.D.S., Columbia, 1953

ORTON L. SHAPIRO. *Assistant Clinical Professor of Dentistry*
 D.S., Columbia, 1950

EPHEN SILSTON. *Assistant Clinical Professor of Dentistry*
 ., Indiana, 1968; D.D.S., 1971; M.Sc.D., Boston, 1973

RVIN SOLOMON. *Assistant Clinical Professor of Dentistry*
 Chem. E., College of the City of New York, 1960; D.D.S., Fairleigh Dickinson,
 55

EPHEN D. STEIN. *Assistant Clinical Professor of Dentistry*
 ., New York University, 1962; D.D.S., 1966

UL J. TANNENBAUM. *Assistant Clinical Professor of Dentistry*
 ., College of the City of New York, 1957; D.D.S., Columbia, 1961

RRY D. WAGENBERG. *Assistant Clinical Professor of Dentistry*
 ., Adelphi, 1969; D.M.D., Pennsylvania, 1971

RNARD H. WASSERMAN. *Clinical Professor of Dentistry*
 ., Brooklyn, 1941; D.D.S., Columbia, 1944

AN A. WINTER. *Assistant Clinical Professor of Dentistry*
 ., Rutgers, 1969; D.D.S., New York University, 1973

ation of Special Dental Services:

ROME BARTWINK. *Assistant Clinical Professor of Dentistry*
 M.D., Tufts, 1948

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VID C. ABELSON. *Assistant Clinical Professor of Dentistry*
 D.S., Michigan, 1971

BERT S. BREAKSTONE. *Assistant Clinical Professor of Dentistry*
 D.S., New York University, 1945

VIN BURNSTEIN. *Assistant Clinical Professor of Dentistry*
 ., New York University, 1950; D.D.S., 1955

MILTON J. GLATZER. *Assistant Clinical Professor of Dentistry*
B.A., Rutgers, 1958; D.D.S., Maryland, 1962

ROBERT S. GOLDMAN. *Associate Clinical Professor of Dentistry*
B.A., Temple, 1963; D.M.D., Pittsburgh, 1968

FRED I. GOODSTEIN. *Assistant Clinical Professor of Dentistry*
B.S., State University of New York (Stony Brook), 1969; D.D.S., Columbia, 1974

JAMES N. HARBO. *Assistant Clinical Professor of Dentistry*
D.D.S., Michigan, 1968

STANLEY HELLER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., New York University, 1948
M.A., Columbia, 1950

ROBERT M. KNEPPER. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1970; D.D.S., Columbia, 1974

NATHANIEL H. LENCHNER. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1943; D.D.S., 1950

D. HAROLD LINN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1942; D.D.S., 1945

IRWIN D. MANDEL. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945

HERBERT I. OSHRAIN. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., New York University, 1948

JAY ROTHSCHILD. *Assistant Clinical Professor of Dentistry*
B.A., Yeshiva, 1957; D.D.S., New York University, 1961

ARTHUR SHAIN. *Associate Clinical Professor of Dentistry*
B.S., New York University, 1935; D.D.S., Dalhousie, 1939; M.P.H., Columbia, 1974

ROBERT N. STUCHELL. *Assistant Professor of Dentistry*
B.S., California State, 1965; D.M.D., Pittsburgh, 1972

STEPHEN WOTMAN. *Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1956

Prosthodontics

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SHELDON ABBOTT. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1948; D.D.S., Pennsylvania, 1952

JACOB ABELSON. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., Columbia, 1945

MARC N. BENHURI. *Assistant Clinical Professor of Dentistry*
B.S., New Haven, 1969; D.M.D., Pittsburgh, 1975

VICTOR S. CARONIA. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1957

- EDWARD J. CHARPENTIER. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1961; D.D.S., Columbia, 1973
- THOMAS J. CLEARY. *Assistant Clinical Professor of Dentistry*
B.S., Georgetown, 1965; D.D.S., Columbia, 1970
- GERARD L. COURTADE. *Adjunct Professor of Dentistry*
B.A., Columbia, 1937; D.D.S., 1940
- ANTHONY J. CURINGA. *Assistant Clinical Professor of Dentistry*
B.S., St. Francis, 1962; D.D.S., Columbia, 1966
- JOSEPH A. DE JULIA. *Associate Clinical Professor of Dentistry*
B.S., Pittsburgh, 1951; D.D.S., Columbia, 1962
- GUSTAV T. DURRER. *Associate Clinical Professor of Dentistry*
Dr. Med. Dent., Berne, 1937; D.D.S., Pennsylvania, 1940
- STANLEY P. FREEMAN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1957; D.D.S., McGill, 1961
- JOEL FRIEDMAN. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1936; D.D.S., Columbia, 1939
- JOEL GOLDIN. *Associate Clinical Professor of Dentistry*
B.A., Amherst, 1959; D.M.D., Harvard, 1963
- ALVIN J. GRAYSON. *Associate Clinical Professor of Dentistry*
D.D.S., Indiana, 1952
- GEORGE W. HINDELS. *Adjunct Professor of Dentistry*
M.D., Vienna, 1938; D.D.S., Columbia, 1943
- ALFRED HOLZMAN. *Associate Clinical Professor of Dentistry*
D.D.S., Michigan, 1927
1. KENNETH JACKIER. *Assistant Clinical Professor of Dentistry*
B.S., Dickinson, 1962; D.M.D., Pennsylvania, 1966
- ARNOLD S. JUTKOWITZ. *Assistant Clinical Professor of Dentistry*
D.M.D., Pennsylvania, 1966
- STANLEY L. KENT. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., Iowa, 1942; D.D.S., Columbia, 1943
- BERTHOLD KUERER. *Assistant Clinical Professor of Dentistry*
B.A., Hunter, 1950; D.D.S., Columbia, 1955
- JOHN J. LUCCA. *Professor of Dentistry*
B.A., New York University, 1941; D.D.S., Columbia, 1947
- GILBERT G. MAZUR. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1950; M.A., California (Berkeley), 1951; D.M.D., Louisville, 1955
- WILLIAM J. MILLER. *Adjunct Professor of Dentistry*
B.A., New York University, 1940; D.D.S., Columbia, 1943
- ROBERT D. MINER. *Associate Clinical Professor of Dentistry*
B.S., Denison, 1962; D.D.S., Columbia, 1967

DENNIS N. MOREA. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1966; D.D.S., Columbia, 1970

RALPH K. NEUHAUS. *Associate Clinical Professor of Dentistry*
B.S., Moravian, 1961; D.D.S., Columbia, 1965

JOHN D. PIRO. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1946

LOUIS I. RUBINS. *Associate Clinical Professor of Dentistry*
B.S., Queens (New York), 1956; D.D.S., Columbia, 1960

JOHN M. SCAROLA. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1956; D.D.S., Columbia, 1960

VICTOR I. SENDAX. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1951; D.D.S., 1955

HARRY SHPUNTOFF. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943

ENNIO L. UCCELLANI. *Professor of Dentistry*
B.S., College of the City of New York, 1946; D.D.S., Columbia, 1948

NICHOLAS A. VERO, JR. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1972

MAXWELL WIDROW. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1940

JEROME A. ZANE. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1943

At Grasslands Hospital:

MAX P. FISHBERG. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., New York University, 1944

ROBERT E. HERLANDS. *Adjunct Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944

At St. Luke's Hospital:

MARC H. LORINSKY. *Assistant Clinical Professor of Dentistry*
D.M.D., Tufts, 1966

Section of Special Dental Services:

SEBASTIAN A. BRUNO. *Clinical Professor of Dentistry*
D.M.D., Tufts, 1948

EUGENE P. LASOTA. *Associate Clinical Professor of Dentistry*
B.A., Hofstra, 1957; D.D.S., Columbia, 1961

Stomatology

DIRECTOR: Professor David J. Zegarelli

MARTIN I. AMES. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949

JACK BUDOWSKY. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1943

JOHN F. CAPRICCIO. *Assistant Clinical Professor of Dentistry*
D.D.S., Georgetown, 1970

ROBERT E. CROWLEY. *Clinical Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939

HAROLD DARWIN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939

JOHN V. DONOVAN. *Assistant Clinical Professor of Dentistry*
B.S., Wagner, 1963; D.D.S., Columbia, 1967

ROBERT GABRIELE. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1970

EDGAR GATTEGNO. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1942; D.D.S., Columbia, 1945

CHARLES W. GOLDFARB. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., New York University, 1943

DAVID I. HENDELL. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., Columbia, 1959

SIDNEY I. HURWITZ. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1933; D.D.S., New York University, 1939

HYMAN ISRAEL. *Assistant Clinical Professor of Dentistry*
B.S., Western Reserve, 1942; D.D.S., 1943; M.P.H., Harvard, 1949

FRANCES R. KARLAN. *Associate Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1942; D.D.S., Columbia, 1949;
M.B.A., Fordham, 1972

MORTIMER KARMIOI. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943

JOHN K. LIND. *Clinical Professor of Dentistry*
B.S., St. John's, 1951; D.D.S., Columbia, 1957

ANDREI M. MARCU. *Assistant Clinical Professor of Dentistry*
M.D., D.D.S., Medico-Pharmacy Institute (Bucharest), 1960

LAWRENCE MARDER. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1949; D.D.S., Columbia, 1954

MICHAEL Z. MARDER. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1963

HARRY H. SCHAEFER. *Assistant Clinical Professor of Dentistry*
B.S., Northwestern, 1942; D.D.S., 1942; D.D.S., New York University, 1943

ROBERT N. SCHIFF. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

MORTON R. SCHOENBERG. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1954; D.D.S., Columbia, 1962

IRVING C. STOWER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1935; D.D.S. Columbia, 1938

DAVID J. ZEGARELLI. *Assistant Professor of Dentistry and Assistant Professor of Pathology*
B.A., Columbia, 1965; D.D.S., 1969

EDWARD V. ZEGARELLI. *Edwin S. Robinson Professor of Dentistry*
B.A., Columbia, 1934; D.D.S., 1937; M.S., Chicago, 1943

EDWARD ZERDEN. *Associate Clinical Professor of Dentistry*
B.A., Michigan, 1941; D.D.S., New York University, 1945

Psychiatric Dental Service:

DIRECTOR: Professor Austin H. Kutscher

HERBERT D. AYERS. *Clinical Professor of Dentistry*
B.A., Columbia, 1929; D.D.S., 1931

WILLIAM C. BARAL. *Assistant Clinical Professor of Dentistry*
B.S., Columbia, 1950; D.D.S., 1953

MARTIN BASSIUR. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1964; D.D.S., 1968

DANIEL J. CHERICO. *Assistant Clinical Professor of Dentistry*
B.A., St. Joseph's Seminary, 1968; Ph.D., Indiana, 1973

JOSEPH C. DELISI. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1952

STEPHEN VITON GULLO. *Assistant Clinical Professor of Dentistry*
Ph.D., Columbia, 1974

BERNARD GURIAN. *Assistant Clinical Professor of Dentistry*
B.S., Illinois, 1937; D.D.S., 1939

ELLEN N. HOSIOSKY. *Associate Clinical Professor of Dentistry*
D.M.D., Basle, 1935; D.H., Guggenheim Dental Clinic, 1939; D.D.S., Columbia, 1947

AUSTIN H. KUTSCHER. *Associate Professor of Dentistry*
B.S., New York University, 1945; D.D.S., Columbia, 1946

JACK J. WEINER. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1924

JAY WEISS. *Assistant Clinical Professor of Dentistry*
B.A., Harvard, 1948; D.M.D., Tufts, 1952; M.A. (Psychology), Montclair State, 1972

Section of Special Dental Services:

MORTON S. BROD. *Associate Clinical Professor of Dentistry*
B.A., Adelphi, 1951; D.D.S., Columbia, 1955

PAMELA B. LUND. *Assistant Clinical Professor of Dentistry*
B.A., St. Olaf (Minnesota), 1967; M.A., Minnesota, 1969

JOSEPH J. MARBACH. *Clinical Professor of Dentistry*
B.A., Drew, 1956; D.D.S., Pennsylvania, 1960

FRANK P. PETRONELLA. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1970

JOHN R. VAROSCAK. *Assistant Clinical Professor of Dentistry*
B.S., Fairleigh Dickinson, 1966; D.D.S., 1969

DAVID ZEISLER. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1930; D.D.S., Columbia, 1934

Dermatology

CHAIRMAN: Professor Leonard C. Harber

LEONARD C. HARBER. *Professor of Dermatology*
B.A., Johns Hopkins, 1949; M.D., New York University, 1953

SAUL L. SANDERS. *Clinical Professor of Dermatology*
B.A., Kenyon, 1950; M.D., Cornell, 1954

RICHARD A. WALZER. *Associate Clinical Professor of Dermatology*
B.A., Harvard, 1952; M.D., Columbia, 1956

Medicine

ACTING CHAIRMAN: Professor Thomas Q. Morris

LESLIE BAER. *Associate Professor of Medicine*
B.A., Wisconsin, 1959; M.D., Columbia, 1963

HYLAN A. BICKERMAN. *Associate Clinical Professor of Medicine*
B.A., Columbia, 1934; M.D., New York University, 1939

JOHN P. BILEZIKIAN. *Assistant Professor of Medicine*
B.A., Harvard, 1965; M.D., Columbia, 1969

DAVID K. BLOOD. *Assistant Professor of Clinical Medicine*
B.A., Amherst, 1962; M.D., Columbia, 1966

MICHAEL H. COHEN. *Assistant Clinical Professor of Medicine*
B.A., Johns Hopkins, 1961; M.D., 1965

DOROTHY ESTES. *Assistant Professor of Clinical Medicine*
B.S., Wheaton (Massachusetts), 1946; M.D., Columbia, 1950

GLENDA J. GARVEY. *Assistant Professor of Medicine*
B.A., Wellesley, 1964; M.D., Columbia, 1969

WYLIE C. HEMBREE III. *Associate Professor of Clinical Medicine (also Obstetrics and Gynecology)*
B.A., Vanderbilt, 1960; M.D., Washington (St. Louis), 1964

KAREN L. KAPLAN. *Assistant Professor of Medicine*
B.A., Miami (Ohio), 1963; M.D., Ph.D., Chicago, 1969

OSCAR LEBWOHL. *Assistant Professor of Clinical Medicine*
B.A., Dartmouth, 1968; B.M.S., 1970; M.D., Harvard, 1972

WILLIAM M. LEE. *Assistant Professor of Clinical Medicine*
B.A., Amherst, 1963; M.D., Columbia, 1967

JAY I. MELTZER. *Associate Clinical Professor of Medicine*
B.A., Princeton, 1949; M.D., Columbia, 1953

THOMAS Q. MORRIS. *Associate Professor of Clinical Medicine*
B.A., Notre Dame, 1954; M.D., Columbia, 1955

JANE H. MORSE. *Associate Professor of Clinical Medicine*
B.A., Smith, 1951; M.D., Columbia, 1955

HANS W. NEUBERG. *Assistant Professor of Clinical Medicine*
B.A., Wagner, 1941; M.D., Columbia, 1950

MARTIN W. OSTER. *Assistant Professor of Medicine*
B.A., Columbia, 1967; M.D., 1971

RICHARD S. RIVLIN. *Associate Professor of Medicine (in Institute of Human Nutrition)*
B.A., Harvard, 1955; M.D., 1959

ALAN SCHWARTZ. *Assistant Professor of Clinical Medicine*
B.S., City College, 1967; M.A., Harvard, 1968; M.D., Columbia, 1974

ALAN SEPLOWITZ. *Assistant Professor of Clinical Medicine*
B.A., Columbia, 1968; M.D., 1972

JEFFREY A. STEIN. *Assistant Clinical Professor of Medicine*
B.A., Harvard, 1960; M.D., 1965

HENRY M. THOMAS III. *Associate Professor of Clinical Medicine*
B.A., Haverford, 1950; M.D., 1957

JACK B. WEISSMAN. *Assistant Professor of Clinical Medicine*
B.A., New York University, 1966; M.D., Harvard, 1970

Microbiology

CHAIRMAN: Professor Harold S. Ginsberg

PAUL D. ELLNER. *Professor of Microbiology*
B.S., Long Island, 1949; M.S., Southern California, 1952; Ph.D., Maryland, 1956

DEAN L. ENGELHARDT. *Assistant Professor of Microbiology*
B.A., Amherst, 1961; M.A., 1963; Ph.D., Rockefeller, 1967

MARCIA J. ENSINGER. *Assistant Professor of Microbiology*
B.S., Cornell, 1967; Ph.D., Pennsylvania, 1973

BERNARD F. ERLANGER. *Professor of Microbiology*
B.S., College of the City of New York, 1943; M.A., New York University, 1949; Ph.D., Columbia, 1951

HAROLD S. GINSBERG. *John E. Borne Professor of Microbiology*
B.A., Duke, 1937; M.D., Tulane, 1941

RAMAREDDY V. GUNTAKA. *Assistant Professor of Microbiology*
B.S., Andhra (India), 1963; M.Sc., Agra (India), 1965; Ph.D., Kansas, 1970

DAVID S. HODES. *Assistant Professor of Pediatrics and Microbiology*
A.B., Princeton, 1963; M.D., Harvard, 1969

ELVIN A. KABAT. *Professor of Microbiology and Human Genetics and Development*
B.S., College of the City of New York, 1932; M.A., Columbia, 1934; Ph.D., 1937

WLADISLAW MANSKI. *Professor of Microbiology*
M. Phil., Warsaw, 1939; D.Sc., Wroclaw, 1951

CHRISTINE A. MILCAREK. *Assistant Professor of Microbiology*
B.A., Duquesne, 1968; Ph.D., Johns Hopkins, 1972

COUNCILMAN MORGAN. *Professor of Microbiology*
B.S., Harvard, 1943; M.D., Columbia, 1946

SHERIE L. MORRISON. *Assistant Professor of Microbiology*
B.A., Stanford, 1963; Ph.D., 1966

BENVENUTO PERNIS. *Professor of Microbiology*
M.D., Milan (Italy), 1947

AUGUS C. SAMPATH. *Associate Clinical Professor of Pathology in Microbiology*
D.Sc., Strasbourg, 1966

AZRA SHAHIDI. *Adjunct Assistant Professor of Microbiology*
M.S., Wisconsin, 1963; Ph.D., Missouri, 1967

SAUL J. SILVERSTEIN. *Assistant Professor of Microbiology*
B.S., Cornell, 1968; Ph.D., Florida, 1971

CHARLES S. H. YOUNG. *Assistant Professor of Microbiology*
B.A., Oxford, 1966; D. Phil., 1969

Otolaryngology

CHAIRMAN: Professor Maxwell Abramson

MAXWELL ABRAMSON. *Professor of Otolaryngology*
B.A., Wesleyan, 1957; M.D., Union (Albany), 1961

ANDREW BLITZER. *Assistant Professor of Otolaryngology (also Dentistry)*
B.A., Adelphi, 1966; D.D.S., Columbia, 1970; M.D., Mt. Sinai (New York), 1973

JOHN D. PIRO. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*
B.A., Fordham, 1943; D.D.S., Columbia, 1946

ROBIN M. RANKOW. *Professor of Clinical Otolaryngology*
B.S., College of the City of New York, 1935; D.D.S., Columbia, 1940; M.D., Rochester, 1950

LAWRENCE SAVETSKY. *Assistant Professor of Clinical Otolaryngology*
B.A., New York University, 1951; M.D., State University of New York, 1955

Pathology

CHAIRMAN: Professor Donald West King

GILES G. ALLARD. *Assistant Clinical Professor of Pathology*
B.A., Montreal, 1944; M.D., Laval (Canada), 1950

LUCRETIA ALLEN. *Assistant Clinical Professor of Pathology*
B.A., New York University, 1948; M.D., State University of New York (Downstate), 1952

IRWIN ALMENOFF. *Associate Clinical Professor of Pathology*
B.S., College of the City of New York, 1948; M.D., Cornell, 1952

RICHARD AXEL. *Assistant Professor of Pathology*
B.A., Columbia, 1967; M.D., Johns Hopkins, 1970

PAUL BACHNER. *Adjunct Assistant Professor of Pathology*
B.A., College of the City of New York., 1959; M.D., Columbia, 1963

ERNEST BADEN. *Adjunct Assistant Professor of Pathology*
M.A., Sorbonne, 1946; D.D.S., New York University, 1950; M.D., Geneva, 1963

HERBERT BARDEN. *Assistant Professor of Clinical Neuropathology*
B.S., Brooklyn, 1952; M.S., New York University, 1960; Ph.D., 1964

DANIEL BENNINGHOFF. *Associate Clinical Professor of Pathology*
B.A., Yale, 1949; M.D., Columbia, 1953

MELVIN N. BLAKE. *Associate Clinical Professor of Oral Pathology*
D.D.S., New York University, 1955

WILLIAM A. BLANC. *Professor of Pathology*
B.A., Geneva, 1940; M.D., 1947; Ph.D., 1952

THOMAS BLUMENFELD. *Assistant Professor of Pediatric Pathology*
B.S., North Carolina, 1960; M.D., Tennessee, 1964

CARMIA BOREK. *Associate Professor of Clinical Pathology (in Radiology)*
B.S., American, 1959; M.S., George Washington, 1961; Ph.D., Weizman Institute, 1967

LAZAREVIC BOZIDAR. *Assistant Clinical Professor of Pathology*
M.D., Belgrade, 1956

A. WHITLEY BRANWOOD. *Professor of Clinical Pathology*
M.B., Ch.B., Edinburgh, 1942; M.D., 1948

DONALD E. BROWN. *Associate Clinical Professor of Pathology*
M.D., Harvard, 1943

JOHN M. BUDINGER. *Associate Clinical Professor of Pathology*
B.S., Northwestern, 1950; M.D., 1954

KENNETH BUTTON. *Assistant Professor of Clinical Pathology*
B.A., Indiana, 1966; M.D., 1970

PREM M. CHAUHAN. *Associate Professor of Clinical Pathology*
M.D., Lady Harding Medical College (India), 1948

ADA B. DECHABON. *Assistant Clinical Professor of Pathology*
B.S., Liceo Senioritas, 1949; M.D., Buenos Aires, 1957

RICHARD DEFENDINI. *Associate Professor of Clinical Neuropathology*
B.A., Michigan, 1948; M.A., 1951; M.D., Rochester, 1961

ARLINE D. DEITCH. *Associate Professor of Clinical Pathology*
B.A., Brooklyn, 1944; M.A., Columbia, 1946; Ph.D., 1954

JOHN J. DIRE. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1953; M.D., George Washington, 1957

LARRY E. DOUGLASS. *Adjunct Assistant Professor of Pathology*
B.A., Washington (St. Louis), 1959; M.D., Vanderbilt, 1960

PHILIP E. DUFFY. *Professor of Neuropathology*
B.A., Columbia, 1943; M.D., 1947

ALBERTO ELQUEZABAL. *Associate Professor of Pathology*
M.D., Salamanca (Spain), 1952

- DEREK ENLANDER. *Assistant Clinical Professor of Pathology*
M.D., Royal College (London), 1963
- STEFAN E. EPSTEIN. *Assistant Clinical Professor of Pathology*
B.A., Columbia, 1956; M.D., State University of New York, 1960
- THOMAS M. FASY. *Assistant Professor of Clinical Pathology*
B.S., St. Joseph's, 1963; M.D., Pennsylvania, 1968
- CECILIA FENOGLIO. *Associate Professor of Pathology*
B.S., St. Elizabeth, 1965; M.D., Georgetown, 1969
- JOHN J. FENOGLIO. *Associate Professor of Pathology*
B.S., Harvard, 1965; M.D., Georgetown, 1969
- JAMES P. FIELDS. *Associate Clinical Professor of Pathology (also Dermatology)*
M.S., Texas, 1957; M.D., 1958
- HAROLD P. GAETZ. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1953; M.D., 1958
- ROBERT S. GALEN. *Assistant Professor of Clinical Pathology*
B.A., Boston, 1966; M.D., 1970
- S. RAYMOND GAMBINO. *Professor of Pathology*
B.S., Antioch, 1948; M.D., Rochester, 1952
- RUDOLF GARRET. *Clinical Professor of Pathology*
M.D., Poland, 1939
- LESTER M. GELLER. *Associate Professor of Neuropathology*
B.A., Cornell, 1947; M.A., Michigan State, 1948; Ph.D., New York University, 1953
- HOWARD B. GOLDSTEIN. *Adjunct Assistant Professor of Pathology*
B.A., Colgate, 1955; M.D., Albany Medical College, 1959
- GABRIEL C. GODMAN. *Professor of Pathology (also Microbiology)*
B.A., New York University, 1941; M.D., 1944
- REBA M. GOODMAN. *Associate Professor of Clinical Pathology*
B.A., Indiana, 1949; Ph.D., Columbia, 1955
- JOHN G. GORMAN. *Clinical Professor of Pathology*
M.B., B.S., Melbourne, 1953
- LISELOTTE GRAF. *Associate Professor of Clinical Pathology*
M.D., Vienna, 1937
- ROSS M. GREY. *Associate Professor of Pathology (Comparative Pathology)*
D.V.M., Alabama Polytechnical Institute, 1945
- JACK W. C. HAGSTROM. *Professor of Pathology*
B.A., Amherst, 1955; M.D., Cornell, 1959
- CLINTON VAN ZANDT HAWN. *Clinical Professor of Pathology*
B.A., Williams, 1937; M.D., Harvard, 1941
- ARTHUR HAYS. *Assistant Professor of Neuropathology*
B.A., Dartmouth, 1962; B.M.S., 1963; M.D., Colorado, 1966
- VICTOR D. HERBERT. *Clinical Professor of Pathology*
B.S., Columbia, 1948; M.D., 1952

ROBERT L. HIRSCH. *Associate Clinical Professor of Pathology*
B.A., Cornell, 1947; M.D., 1951

ARTHUR I. HURVITZ. *Adjunct Assistant Professor of Pathology*
D.V.M., Michigan State, 1964; Ph.D., California (Davis), 1967

ROBERT V. P. HUTTER. *Adjunct Professor of Pathology*
B.A., State University of New York (Syracuse), 1950; M.D., 1954; M.A., Yale, 1968

HARRY L. IOACHIM. *Adjunct Professor of Pathology*
M.D., Bucharest, 1949

ELIZABETH JACOB. *Assistant Professor of Clinical Pathology*
M.B., B.S., India, 1955

AUSTIN D. JOHNSTON. *Professor of Clinical Pathology (assigned to Orthopedic Surgery)*
B.A., Columbia, 1945; M.D., 1947

CATHERINE KAMBOLIS. *Adjunct Assistant Professor of Pathology*
M.D., Athens, 1955

KENDALL KANE. *Assistant Clinical Professor of Pathology*
B.A., Princeton, 1955; M.D., Columbia, 1960

MAVIS KAUFMAN. *Associate Professor of Neuropathology (assigned to Psychiatry)*
M.D., New York Medical College, 1944

DONALD WEST KING. *Francis Delafield Professor of Pathology*
M.D., Syracuse, 1949

MARY ELIZABETH KING. *Associate Professor of Clinical Pathology*
B.A., Smith, 1947; M.D., Columbia, 1951

JOHN Y. KIYASU. *Associate Clinical Professor of Pathology*
B.A., California, 1950; M.A., 1951; Ph.D., 1955

DANIEL M. KNOWLES. *Assistant Professor of Pathology*
B.A., Bridgeport., 1969; M.D., Chicago, 1973

MICHAEL N. KOSS. *Assistant Professor of Pathology*
B.A., Columbia, 1965; M.D., Stanford, 1970

PAUL R. KRIEGER. *Adjunct Assistant Professor of Pathology*
B.S., College of the City of New York, 1967; M.D., New York University, 1971

MARTIN S. KRUMERMAN. *Assistant Clinical Professor of Pathology*
B.A., New York University, 1961; M.D., 1965

NATHAN LANE. *Professor of Surgical Pathology*
B.A., Columbia, 1943; M.D., 1945

DENG-FONG LIAU. *Assistant Clinical Professor of Pathology*
B.S., Taiwan, 1961; Ph.D., McGill, 1971

GEORGE LUMB. *Adjunct Professor of Pathology*
M.D., Royal College of Physicians (London), 1946

ANTHONY MARCHAND. *Assistant Clinical Professor of Pathology*
B.A., Connecticut, 1966; M.D., Duke, 1970

- ELVIN J. MARX. *Adjunct Assistant Professor of Pathology*
A., Cornell, 1959; M.D., Einstein, 1963
- RICARDO MESA-TEJADA. *Assistant Professor of Pathology*
S., Manhattan, 1964; M.D., Madrid, 1970
- ERMAND F. MIRANDA. *Assistant Professor of Pathology*
S., Columbia, 1969; Ph.D., 1973
- ASIL MOUMGIS. *Adjunct Assistant Professor of Pathology*
I.D., Pittsburgh, 1949
- FREDERICK MUSCHENHEIM. *Adjunct Assistant Professor of Pathology*
A., Harvard, 1953; M.D., McGill, 1963
- HIROSHI NAKAZAWA. *Assistant Clinical Professor of Pathology*
I.D., Keio (Japan), 1958
- ERTEMIS NASH. *Assistant Clinical Professor of Pathology*
A., Smith, 1949; M.D., Columbia, 1953
- OLANGE G. ABU NASSAR. *Adjunct Assistant Professor of Pathology*
I.D., American (Beirut), 1965
- LAYTON NATTA. *Assistant Professor of Medicine and Pathology*
I.D., Toronto, 1961
- ARLOS NAVARRO. *Associate Clinical Professor of Pathology*
S., Mexico, 1947; M.D., 1955
- ERDA NETTE. *Assistant Professor of Clinical Pathology*
S., Columbia, 1968; Ph.D., 1973
- OBERT D. NEWMAN. *Adjunct Assistant Professor of Pathology*
S., California (Los Angeles), 1958; M.D., California (San Francisco), 1962
- JOHN F. NICHOLSON. *Associate Professor of Pathology (also Pediatrics)*
A., Vanderbilt, 1955; M.D., 1958
- JOSEPH O'BRIEN. *Adjunct Assistant Professor of Pathology*
A., Columbia, 1957; M.D., State University of New York (Downstate), 1961
- ALFRED RICHARD PACHTER. *Adjunct Associate Professor of Pathology*
I.D., Zurich, 1956
- ROBERT R. PASCAL. *Clinical Professor of Pathology*
A., Columbia, 1958; M.D., 1962
- ARL H. PERZIN. *Associate Professor of Clinical Surgical Pathology*
A., Columbia, 1954; M.D., 1958
- MICHAEL PESCE. *Assistant Professor of Clinical Pathology*
S., St. John's, 1967; Ph.D., 1971
- EDWIN PESTKA. *Adjunct Professor of Pathology*
A., Princeton, 1957; M.D., Pennsylvania, 1961
- LOUISE L. PHILLIPS. *Associate Clinical Professor of Pathology*
S., William and Mary, 1934; M.A., Columbia, 1940
- CONRAD L. PIRANI. *Professor of Pathology*
I.D., Milan, 1938

WILLIAM POLLACK. *Adjunct Associate Professor of Pathology*
M.S., Rutgers, 1950; Ph.D., 1964

RALPH M. RICHART. *Professor of Pathology (assigned to Obstetrics & Gynecology)*

B.A., Johns Hopkins, 1954; M.D., Rochester, 1958

ROBERT R. RICKERT. *Adjunct Associate Professor of Pathology*
B.A., Michigan, 1958; M.D., Johns Hopkins, 1962

THEOPHILUS ROBERTS. *Professor of Clinical Pathology*
M.D., Meharry, 1951

LEON ROIZIN. *Professor of Neuropathology (assigned to Psychiatry)*
B.A., State Lyceum (Bessarabia), 1930; M.D., Royal University (Milan), 1936

EDWARD RORAT. *Adjunct Assistant Professor of Pathology*
M.D., Stettin (Poland), 1959

STEPHEN RYAN. *Associate Clinical Professor of Pathology*
M.D., Colorado, 1961

ANGUS C. SAMPATH. *Associate Clinical Professor of Pathology*
D.Sci., Strasbourg, 1966

HENRY G. SCHRIEVER. *Assistant Clinical Professor of Pathology*
B.A., Vermont, 1956; M.D., New York Medical College, 1960

MATHIEU SEIDE. *Assistant Clinical Professor of Pathology*
M.D., Port-Au-Prince, Haiti, 1960

LEWIS SHAPIRO. *Professor of Clinical Dermatology and Pathology*
B.A., Duke, 1948; M.D., 1952

FRED G. SILVA II. *Assistant Professor of Pathology*
B.S., Oklahoma, 1968; M.D., 1972

DAVID N. SILVERS. *Associate Clinical Professor of Dermatology and Pathology*
B.A., Haverford, 1964; M.D., Duke, 1968

STANLEY S. SIMBONIS. *Associate Clinical Professor of Pathology*
B.S., Yale, 1953; M.D., 1957

RALPH WOOD SNYDER. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1951; M.D.C.M., 1953

HAROLD J. SOBEL. *Associate Clinical Professor of Pathology*
B.A., Brooklyn, 1950; M.D., Chicago Medical School, 1954

SHELDON C. SOMMERS. *Clinical Professor of Pathology*
M.D., Harvard, 1941

RICHARD L. STILLER. *Assistant Professor of Clinical Neuropathology*
B.A., Hunter, 1959; Ph.D., St. John's, 1972

HARRY H. STUMPF. *Adjunct Associate Professor of Pathology*
B.A., New York University, 1947; M.D., State University of New York, 1951

NICOLE SUCIU-FOCA. *Associate Professor of Pathology (in Surgery)*
B.S., Bucharest, 1959; M.S., 1960; Ph.D., 1965

- CHARLD L. SWARM. *Associate Clinical Professor of Pathology*
A., Washington (St. Louis), 1949; M.D., 1950
- YRON TANNENBAUM. *Associate Professor of Clinical Pathology (assigned Urology)*
S., New York University, 1952; M.S., 1955; Ph.D., 1957; M.D., Chicago, 1961
- RGINIA TENNYSON. *Professor of Anatomy and Pathology*
S., Pennsylvania State, 1946; M.S., Baylor, 1956; Ph.D., Columbia, 1960
- HN A. TERZAKIS. *Adjunct Associate Professor of Pathology*
D., New York University, 1961
- MILIP TOMASHEFSKY. *Assistant Professor of Clinical Pathology*
S., College of the City of New York, 1946; M.S., 1951; Ph.D., New York University, 1969
- ENRY J. VOGEL. *Professor of Microbiology*
S., London, 1939; M.S., New York University, 1941; Ph.D., 1949
- TH H. VOGEL. *Associate Professor of Clinical Pathology*
D., New York University, 1948
- RNARD M. WAGNER. *Clinical Professor of Pathology*
D., Hahnemann, 1949
- NIEL R. WEISS. *Adjunct Assistant Professor of Pathology*
S., Queens, 1950; M.D., 1954
- JOACHIM WIGGER. *Associate Professor of Clinical Pediatric Pathology*
D., Hamburg, 1954
- CHOLAS J. WILLSON. *Assistant Professor of Clinical Pathology*
S., St. Peter's, 1959; M.D., Seton Hall, 1963
- ORGE D. WILNER. *Associate Professor of Pathology*
S., Northwestern, 1962; M.D., 1965
- ARIANNE WOLFF. *Associate Professor of Clinical Surgical Pathology*
A., Hunter, 1948; M.D., Columbia, 1952
- ITY YANNOPOULOS. *Adjunct Associate Professor of Pathology*
D., Thessaloniki (Greece), 1954
- DAVID J. ZEGARELLI. *Assistant Professor of Dentistry and Assistant Professor Pathology*
A., Columbia, 1965; D.D.S., 1969
- EDERICK T. ZUGIBE. *Adjunct Associate Professor of Pathology*
S., St. Francis (New York), 1951; M.S., Chicago, 1959; Ph.D., 1960; M.D., West Virginia, 1968

Pediatrics

- HAIRMAN: Professor Michael Katz
- CHAEAL KATZ. *Reuben S. Carpentier Professor of Pediatrics (also Public Health)*
A., Pennsylvania, 1949; M.D., State University of New York (Downstate), 1956; S., Columbia, 1963

MYRON WINICK. *Robert R. Williams Professor of Nutrition and Director of the Institute of Human Nutrition*
B.A., Columbia, 1951; M.S., Illinois, 1952; M.D., State University of New York (Downstate), 1956

Pharmacology

CHAIRMAN: Professor Brian F. Hoffman

J. THOMAS BIGGER, JR. *Professor of Pharmacology and of Medicine*
B.A., Emory, 1955; M.D., Georgia, 1960

KENNETH E. EAKINS. *Professor of Pharmacology (in Ophthalmology)*
Ph.D., London, 1962

LOWELL M. GREENBAUM. *Professor of Pharmacology*
B.S., College of the City of New York, 1949; Ph.D., Tufts, 1953

BRIAN F. HOFFMAN. *David Hosack Professor of Pharmacology*
B.A., Princeton, 1943; M.D., Long Island, 1947

FREDERICK G. HOFMANN. *Professor of Pharmacology*
B.A., Michigan, 1943; Ph.D., Harvard, 1952

NORMAN KAHN. *Associate Professor of Pharmacology and of Dentistry*
B.A., Columbia, 1954; D.D.S., 1958; Ph.D., 1964

EDWARD B. KIRSTEN. *Adjunct Assistant Professor of Pharmacology*
B.S., Fairleigh Dickinson, 1962; M.S., New York University, 1966; M.A., Hunter College, 1969; Ph.D., City University of New York, 1969

HAROLD C. NEU. *Professor of Medicine and of Pharmacology*
B.A., Creighton, 1956; M.D., Johns Hopkins, 1960

SHIH-HSUN NGAI. *Professor of Anesthesiology and of Pharmacology*
M.B., National Central (Nanking), 1944

MICHAEL R. ROSEN. *Associate Professor of Pharmacology*
B.A., Wesleyan, 1960; M.D., State University of New York, Downstate Medical Center, 1964

WILBUR H. SAWYER. *Professor of Pharmacology*
B.A., Harvard, 1942; M.D., 1945; Ph.D., 1950

LANCE L. SIMPSON. *Associate Professor of Pharmacology*
B.A., Vanderbilt, 1966; Ph.D., California (Berkeley), 1969

HSUEH-HWA WANG. *Associate Professor of Pharmacology*
M.D., National Central University Medical School (China), 1946

SHIH-CHUN WANG. *Gustavus and Louise Pfeiffer Professor of Pharmacology*
B.S., Yenching, 1931; M.D., Peiping Union Medical College (China), 1935; Ph.D., Northwestern, 1940

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B.S., Bates, 1963; Ph.D., Columbia, 1968

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Cambridge, 1959

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B., National Taiwan, 1954; Ph.D., Columbia, 1957

MOND EMMERS. *Associate Professor of Physiology*
A., East Texas Baptist, 1953; M.A., North Carolina, 1955; Ph.D., Syracuse,
1958

CHEL FERIN. *Associate Professor of Physiology (in Obstetrics and Gynecology)*
D., Louvain, 1964

NG-MING JAN. *Assistant Professor of Physiology*
B., National Taiwan, 1967; Ph.D., Columbia, 1971

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A., Harvard, 1952; M.D., New York University, 1956

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A., Wooster, 1965; Ph.D., Columbia, 1971

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A., Rutgers, 1939; Ph.D., 1945

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A., West Virginia, 1951; M.S., 1952; Ph.D., Rutgers, 1955

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A., Grinnell, 1954; M.S., Rochester, 1956; Ph.D., Florida, 1959

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A., New York University, 1946; M.D., 1949

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A., Columbia, 1954; M.D., New York University, 1959

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D., Southern California, 1940

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A., Radcliffe, 1964; Ph.D., Cornell, 1971

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B.S., Tulane, 1943; M.D., Chicago, 1946

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B.S., Columbia, 1949; M.D., 1954

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B.A., Harvard, 1952; M.D., Pennsylvania, 1956

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B.A., Hunter, 1957; M.D., State University of New York (Downstate), 1960; M.P.H., Harvard, 1963

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B.A., Columbia, 1949; M.A., 1952; Ph.D., Michigan, 1961

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B.S., Western Reserve, 1942; D.D.S., 1944; B.A., Brooklyn, 1958; M.P.H. Columbia, 1957

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B.A., Columbia, 1959; M.S., 1961; Ph.D., 1967

HAROLD FRUCHTBAUM. *Adjunct Associate Professor of Public Health (History and Philosophy of Public Health)*
B.C.E., New York University, 1955; M.S., Rensselaer Polytechnic Institute, 1956; Ph.D., Harvard, 1964; M.A., Cambridge, 1968

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Academic Calendar, 1979-1980, 1980-1981

Major Religious Holidays

a statement of University policy regarding religious holidays and applicable fees for this academic year, see *Registration, Expenses, and Financial Aid—Religious Holidays*.

Autumn Term 1979

AUGUST

Wednesday.* Last day to apply for October degrees and certificates (see September 6).

31 Thursday-Friday. Registration for the academic year, including payment of fees, for first- and second-year D.D.S. degree candidates.

SEPTEMBER

1 Tuesday-Wednesday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.

2 Wednesday.† Registration for the academic year, including payment of fees, for first-year students in the postdoctoral orthodontics program.

3 Thursday. Last day to file *late* application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

4 Thursday. Classes begin for students in the Division of Dental Hygiene and first-year students in the postdoctoral orthodontics program.

5 Thursday-Friday.† Registration for the academic year, including payment of fees, for third- and fourth-year D.D.S. degree candidates.

6 Monday. Classes begin for D.D.S. degree candidates.

7 Monday. First day to change programs and to apply to audit courses.

8 Wednesday.† Registration, for the academic year, including payment of fees, for all students in the postdoctoral programs (except for first-year orthodontics students).

9 Thursday. Classes begin for all students in the postdoctoral programs (except for first-year orthodontics students).

10 Friday. Last day to change programs and to apply to audit courses. **No payment of fees for individual courses dropped after this date.**

OCTOBER

1 Wednesday. Award of October degrees and certificates.

2 Friday. Last day to drop courses for students in the Division of Dental Hygiene.

Students who apply after this date must pay a late fee.

Students allowed to register after the period specified must pay a late fee.

NOVEMBER

2 Friday.* Last day to apply or reapply for January degrees and certificates (see December 7).

5 Monday. Academic holiday for students in the Division of Dental Hygiene.

6 Tuesday. Election Day. Holiday for students in all programs.

22-25 Thursday-Sunday. Thanksgiving holidays for students in all programs.

DECEMBER

7 Friday. Last day to file late application for January degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

12 Wednesday. Last day of classes for students in the Division of Dental Hygiene.

13-20 Thursday-Thursday. Final examinations for students in the Division of Dental Hygiene.

15 Saturday, through January 1, 1980, Sunday. Winter holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.

22 Saturday, through January 17, 1980, Thursday. Winter holidays for students in the Division of Dental Hygiene.

Spring Term 1980

JANUARY

18 Friday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.

21 Monday. Classes begin for students in the Division of Dental Hygiene.

23 Wednesday. Award of January degrees and certificates.

24 Thursday. First day to change programs and to apply to audit courses.

30 Wednesday. Last day to change programs and to apply to audit courses. No adjustment of fees for individual courses dropped after this date.

FEBRUARY

18 Monday. Washington's Birthday. Holiday for D.D.S. degree candidates and for students in the postdoctoral programs.

18 Monday.* Last day to apply for May degrees and certificates (see April 18).

MARCH

7 Friday. Last day to drop courses for students in the Division of Dental Hygiene.

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

16 Sunday-Sunday. Spring holidays for students in the Division of Dental Hygiene.

Saturday, through April 6, Sunday. Spring holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.

APRIL

Monday. Last day to file *late* application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

Wednesday. Last day of classes for students in the Division of Dental Hygiene.

MAY

8 Thursday-Thursday. Final examinations for students in the Division of Dental Hygiene.

Commencement 1980

MAY

Sunday. Baccalaureate Service.

Wednesday. Conferral of May degrees and certificates.

Summer Session 1980

MAY

Thursday. Summer session begins for students in the postdoctoral orthodontics program.

Monday. Memorial Day. University holiday.

Tuesday. Summer session begins for second- and third-year D.D.S. degree candidates.

JUNE

Wednesday. Classes end for second-year students in the postdoctoral orthodontics program.

JULY

Friday. Independence Day. University holiday.

Friday. Summer session ends for second- and third-year D.D.S. degree candidates.

SEPTEMBER

Wednesday. Summer session ends for students completing the first year in the postdoctoral orthodontics program.

Students who apply after this date must pay a late fee.

Students allowed to register after the period specified must pay a late fee.

Autumn Term 1980

AUGUST

1 Friday.* Last day to apply for October degrees and certificates (see September 4)

28-29 Thursday-Friday. Registration for the academic year, including payment of fees, for first- and second-year D.D.S. degree candidates.

SEPTEMBER

2-3 Tuesday-Wednesday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.

3 Wednesday.† Registration for the academic year, including payment of fees, for first-year students in the postdoctoral orthodontics program.

4 Thursday. Last day to file *late* application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

4 Thursday. Classes begin for students in the Division of Dental Hygiene and for first-year students in the postdoctoral orthodontics program.

4-5 Thursday-Friday.† Registration for the academic year, including payment of fees, for third- and fourth-year D.D.S. degree candidates.

8 Monday. Classes begin for D.D.S. degree candidates.

8 Monday. First day to change programs and to apply to audit courses.

10 Wednesday.† Registration for the academic year, including payment of fees, for all students in the postdoctoral programs (except for first-year orthodontics students).

11 Thursday. Classes begin for all students in the postdoctoral programs (except for first-year orthodontics students).

16 Tuesday. Last day to change programs and to apply to audit courses. **adjustment of fees for individual courses dropped after this date.**

OCTOBER

22 Wednesday. Award of October degrees and certificates.

24 Friday. Last day to drop courses for students in the Division of Dental Hygiene.

31 Friday.* Last day to apply for January degrees and certificates (see December 5).

NOVEMBER

3 Monday. **Academic holiday for students in the Division of Dental Hygiene.**

4 Tuesday. **Election Day. Holiday for students in all programs.**

*Students who apply after this date must pay a late fee.

†Students allowed to register after the period specified must pay a late fee.

NOVEMBER

-30 Thursday-Sunday. Thanksgiving holidays for students in all programs.

DECEMBER

Friday. Last day to file *late* application for January degrees and certificates. Applications received after this date will automatically be applied to the next referral date.

Wednesday. Last day of classes for students in the Division of Dental Hygiene.

-18 Thursday-Thursday. Final examinations for students in the Division of Dental Hygiene.

Saturday, through January 4, 1981, Sunday. Winter holidays for D.S. degree candidates and for all students in the postdoctoral programs.

Saturday, through January 15, 1981, Thursday. Winter holidays for students in the Division of Dental Hygiene.

Spring Term 1981**JANUARY**

Friday.† Registration, including payment of fees, for students in the Division of Dental Hygiene.

Monday. Classes begin for students in the Division of Dental Hygiene.

Wednesday. Award of January degrees and certificates.

Thursday. First day to change programs and to apply to audit courses.

Wednesday. Last day to change programs and to apply to audit courses.
No adjustment of fees for individual courses dropped after this date.

FEBRUARY

Monday. Washington's Birthday. Holiday for D.D.S. degree candidates and for students in the postdoctoral programs.

Monday.* Last day to apply for May degrees and certificates (see April 6).

MARCH

Friday. Last day to drop courses for students in the Division of Dental Hygiene.

-15 Sunday-Sunday. Spring holidays for students in the Division of Dental Hygiene.

† Students who apply after this date must pay a late fee.

* Students allowed to register after the period specified must pay a late fee.

APRIL

6 Monday. Last day to file *late* application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

11-19 **Saturday-Sunday. Spring holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.**

29 Wednesday. Last day of classes for students in the Division of Dental Hygiene.

30 Thursday, through May 7, Thursday. Final examinations for students in the Division of Dental Hygiene.

Commencement 1981

MAY

10 Sunday. Baccalaureate Service.

13 **Wednesday. Conferral of May degrees and certificates.**

Summer Session 1981

MAY

14 Thursday. Summer session begins for students in the postdoctoral orthodontics program.

25 **Monday. Memorial Day. University holiday.**

26 Tuesday. Summer session begins for second- and third-year D.D.S. degree candidates.

JUNE

24 Wednesday. Classes end for second-year students in the postdoctoral orthodontics program.

JULY

24 Friday. Summer session ends for second- and third-year D.D.S. degree candidates.

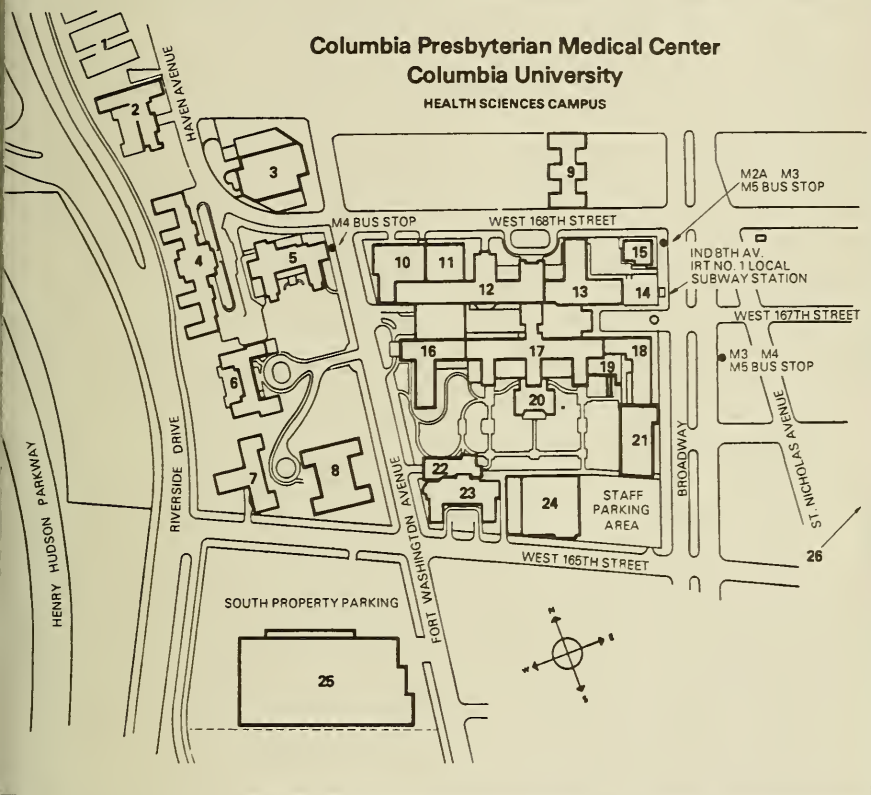
SEPTEMBER

9 Wednesday. Summer session ends for students completing the first year of the postdoctoral orthodontics program.

A compass rose with a star-like center, showing the cardinal and intercardinal directions. The letter 'N' is placed above the top point, indicating North. The rose is positioned within a rectangular frame that has some open sides.



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Columbia University**
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- | | | |
|---|---|--|
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| Augustus Long Library | 9 Georgian Nurses Residence | 5 The Neurological Institute of New York |
| Dana W. Atchley Pavilion | 22 Edward S. Harkness Eye Institute | 6 School of Nursing |
| The Babies Hospital | 23 Eye Institute Research Laboratories | 25 Parking facilities |
| Babies Hospital Research, Teaching, and Office Addition | 7 Harkness Memorial Hall | 17 Presbyterian Hospital New York Orthopedic Hospital |
| Bard Hall Medical Student Residence | 16 Harkness Pavilion | Sloane Hospital for Women |
| Bard Haven Towers | 20 Pauline A. Hartford Memorial Chapel | Squier Urological Clinic |
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| Central Service Building | 2/12 International Institute for the Study of Human Reproduction | 15 School of Public Health |
| College of Physicians and Surgeons | | 19 Radiotherapy Center |
| Center for Community Health Systems | | 13 Vanderbilt Clinic |
| | | 14 Vanderbilt Clinic Addition |



COLUMBIA
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bulletin



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1981-1983

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*Columbia University Bulletin
School of Dental and Oral Surgery*

COLUMBIA
UNIVERSITY

bulletin



COLUMBIA UNIVERSITY
School of Dental
and Oral Surgery
1981-1983

D.D.S. Program

Postdoctoral Programs in Dental Specialties

Dental Hygiene Programs

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 DAVID J. ZEGARELLI, D.D.S. *Associate Professor of Dentistry (in Pathology)*

Administrative Staff

- IDAHLA C. ANTOSIK, B.A. *Associate Registrar*
 KATHRINE L. BAKER. *Administrative Assistant*
 PETER J. CAFFREY, M.B.A. *Manager, Information Systems*
 THORNTON DAVIDSON, B.A. *Editorial Assistant, Continuing Education in the Health Sciences*
 ANN M. EMMERICH. *Assistant to the Dean*
 ANNE L. HUMMERS, B.A. *Director, Office of Admissions and Financial Aid*
 DOUGLAS McANDREW, B.A. *Coordinator, Audio-Visual Media*
 MICHAEL J. McGRATH. *Manager of Dental Stores*
 ENNIO L. UCCELLANI, D.D.S. *Director of Clinical Affairs*

Officers Emeriti

- CARL R. OMAN. *Professor Emeritus of Dentistry*
 SOLOMON N. ROSENSTEIN. *Professor Emeritus of Dentistry*
 FRANCES A. STOLL. *Professor Emeritus of Dental Hygiene*
 EDWARD V. ZEGARELLI, D.D.S., M.S. *Professor Emeritus of Dentistry and Dean Emeritus*

The School of Dental and Oral Surgery

The School traces its origin to 1852, when the New York State legislature chartered the New York College of Dentistry, later renamed the New York College of Dental and Oral Surgery. In 1916, Columbia University, having recognized dentistry as an integral and important part of the health sciences and a true university discipline, established its own school of dental education. Shortly thereafter, the new Columbia University dental school absorbed both the New York Post-graduate School of Dentistry and the New York School of Dental Hygiene. In 1923, it was joined by the New York College of Dental and Oral Surgery to form the present School of Dental and Oral Surgery of Columbia University, thus completing a series of unique and complex mergers.

The institution has remained a leading force in dental education and research ever since its establishment. In the early 1920s Professor William J. Gies of the Columbia Biochemistry Department established the International Association for Dental Research, the first organization devoted exclusively to research in the field of dentistry. In 1926 Professor Gies prepared the report *Dental Education in the United States and Canada* for the Carnegie Foundation for the Advancement of Teaching. This was a major critique of dental education in the United States, and its publication resulted in the acceptance by dental schools throughout the country of the basic educational policies and objectives developed at Columbia University.

Dentistry in the 1980s

In recent decades, complex societal and governmental forces have had an increasing influence on dental education and the practice of dentistry in the United States. Government has come to view health services in the same light as public utilities, and members of the public have come to view themselves as active participants in the health care system rather than as passive recipients of treatment.

Through advances in research and through the evolution of newer modes of practice, the field of dentistry has developed the capacity to deliver quality dental care to large numbers of individuals. A major unsolved problem is how to devise ways of using this great capacity to provide care at a reasonable cost to a greater proportion of our population, including those who do not now have adequate and easy access to dental care because of poverty or special problems such as handicaps, age infirmities, or remoteness of location.

Just as the practice of dentistry is undergoing considerable change, dental education similarly faces a number of challenges for the future. The School of Dental and Oral Surgery is responding to these challenges through the development of new instructional programs and long-range planning designed to provide flexibility in educational options.

A necessary mission of the School is to prepare dental students to face a professional future in which many changes may be anticipated. Students completing the D.D.S. degree within the next few years will enter a professional world in which traditional health-care systems and the old values are still strong. They must be able to function successfully and contribute through some existing career role in that world, but during their active professional life span of approximately forty years the health care system, including dentistry, will surely change materially.

Changes in the economics of dental health care may also be expected from scientific research aimed at reducing the prevalence of dental caries and other dental diseases. The need for well-trained dentists in this country will remain strong, however, as the growing population of elderly persons in the United States who require care will place important demands on the dental care delivery system. While it is difficult to predict accurately the outcome of these changes and the results of these forces on dental practice, it is clear that future graduates in dentistry must be provided with an education that will permit them to adapt to a changing way of life and a changing demography. The new dentist must have the commitment, the capacity, and the ability to continue to learn during a long and constantly changing professional lifetime. These are attitudes and skills that must be fostered in the dental educational process.

Curriculum

Many departments of the University contribute to and collaborate in the education of dental, postdoctoral, and dental hygiene students, assuring them a broad foundation for sound professional development. The guiding educational policy of Columbia University is the pursuit of excellence, and the primary goal of the School of Dental and Oral Surgery is the preparation of graduates equipped to fulfill their obligations to the individual, to society, and to the profession.

The University, recognizing the need for greater emphasis on the prevention of dental disease, constantly strives to revise the academic program. The curriculum is designed to increase a student's appreciation for the conceptual basis of dentistry. Adequate preparation for the demands of dentistry requires an understanding of broad biological principles integrated with a continually evolving body of scientific information in clinical dentistry and basic dental research. Predoctoral students, as directed observers, are exposed to a full spectrum of dental problems. They are then introduced to surgical and manipulative procedures as well as to methods of diagnosis and the prevention of disease. Emphasis is on the close relationship between health and disease, both systemic and oral; on systemic aberrations that affect oral structures; on diseases of the face and mouth that may affect other organ systems; and on oral health as an essential component in total health.

Clinical training is broad in scope. It is designed to produce competence in the recognition of oral disease and disorders, stress the essential role of prevention in the control of oral disease, establish the concept of maintaining oral structures in optimal health, and to develop skills in the planning and rendering of treatment.

A curriculum must be considered as only the initial framework for a student's lifetime participation in the profession of dentistry. To this end, the curriculum cultivates in students habits of independent thought and scholarship and encourages the continual evaluation of new knowledge. The future development and attainment of professional competence are assured by fostering the spirit of inquiry, and the school stresses the application of the scientific method and student participation in research.

Knowledge of the processes of human growth and development and of the prevention of disease and abnormality has resulted in an extensive reduction in infant and child mortality, and in a marked increase in the life span of the individual. In dentistry, prevention of dental and oral disease and disorder provides an opportunity

for children to reach adulthood with complete, healthy dentitions. The increased life span of Americans, on the other hand, presents many physiological, pathological, and psychological problems that are peculiar to the aged and must be considered when rendering dental treatment to elderly patients. Individuals with medical, neurological, and other handicaps also present special problems, and they have been able to receive dental treatment through the establishment of special facilities in the School such as the Treatment of the Handicapped Clinic, in which all dental students receive training.

The School also provides for the training of auxiliary personnel to augment dental health services. The Division of Dental Hygiene programs are designed to educate students toward an appreciation of their role in a professional society, toward an awareness of the ways in which professional activities involve them in a wide range of decisions, and toward expertise in clinical skills. Candidates are selected on the basis of scholarship, achievement, and ability to prepare for leadership positions within the profession. The undergraduate programs in dental hygiene focus on fundamental knowledge and provide a base for graduate education. The graduate program extends and deepens knowledge and practice in a particular area of interest.

A dental auxiliary utilization program trains dental students in the efficient use of auxiliaries. In the Dental TEAM practice program, students participate in a simulated group practice in which they master the principles of office management, including the coordination of the activities of multiple auxiliaries.

The University recognizes that accomplishing the objectives of its dental education program requires the selection of students with superior abilities and academic qualifications, acquisition and maintenance of an excellent staff, and the constant pursuit of knowledge through an active and diversified research program. Conscious of these needs, the School selects its students with care and maintains small classes with a favorable ratio of staff to students. This ratio permits individual instruction and a stimulating relationship between student and instructor. Through the years the School has had a distinguished staff which has demonstrated accomplishment in educational research and professional leadership, and which continues to prepare students for the expanding professional responsibilities of dentistry and the prevention of dental disease.

The Study of Dentistry in New York City

New York City offers an extremely advantageous setting for the study of dentistry. Many of the most talented dental professionals of the nation and of the world maintain practices in New York City, and there are opportunities for students to visit private offices, clinics, and hospital dental services in return for a quick ride downtown. In addition, the professional dental resources of the city provide students with exposure to leading authorities in every field of dentistry, many of whom serve on the faculty of the School.

At the same time, Columbia students have opportunities for an unusually wide choice of cultural and artistic activities for which New York City is well known. Museums, theaters, opera houses, concert halls, and cinemas provide almost unlimited entertainment possibilities. Finally, for those interested in pursuing educational courses in addition to dentistry, Columbia University and numerous other academic centers in the city offer many opportunities for extracurricular learning.

Programs of Study

D.D.S. Program

The School offers basic science courses to both dental and medical students in the form of a "core" program. During the first year the dental student takes all the required basic science subjects except pharmacology, neural science, and general pathology, which are second-year courses. Also in the first year the dental student is required to take: (1) *Interdisciplinary Correlation D5002—Introduction to dentistry*, which reviews the history and nature of dentistry and its significance, as well as the means of delivery of dental care and the kinds of preventive treatment services that modern dentistry provides; (2) an interdisciplinary course, *Behavioral Science D5851—Human Behavior*, dealing with psychological aspects of dentistry and patient care; and (3) *Orofacial Development D5450–D5451—Oral Anatomy and Occlusion*, which introduces students to the fundamental concepts of dental morphology and emphasizes the importance of physiologic function to continued oral health.

The second year is essentially a "core" dental science year in which the curriculum serves to correlate the application of basic biological information to oral and dental problems that will be faced later in clinical practice. The conceptual basis for the application of modern scientific methods in the recognition, prevention, and treatment of dental disorders is stressed in a range of courses that includes cariology, genetics, growth and development, dental materials, oral biology, radiology, and preventive dentistry. Clinical observation, small group teaching, and seminars provide the second-year student with a comprehensive view of dentistry, while technical laboratory courses in dentistry provide preparation for the clinical years. The program also includes integrated courses in dentistry (recognition, prevention, concepts of therapy, instrumentation, and clinical observation), as well as a course in psychosocial aspects of dentistry.

The third year is primarily clinical, with training in all phases of dentistry. Emphasis is on correlation of the various dental disciplines with one another and with the basic sciences. Prevention and comprehensive treatment are stressed while technical laboratory procedures are limited. The third- and fourth-year students function as a group, or module, in a setting similar to that of private practice, where total patient care is rendered by each student and supervision is under an interdisciplinary teaching team. This teaching team is supplied by the professional staff of the divisions of Periodontics, Operative Dentistry, Prosthodontics, Preventive Dentistry, and Endodontics. Consultation services are made available by the divisions of Oral Diagnosis, Oral Surgery, and Orthodontics. The postdoctoral programs of endodontics and periodontics serve the undergraduate clinical modules by treating the difficult cases in their specialty areas.

During the fourth year the opportunity to choose electives or area-of-concentration programs in special areas of dentistry is made available. In order to increase their ability to view clinical cases in a comprehensive manner, fourth-year students spend time as student preceptors in the clinic and in seminars held in conjunction with underclassmen and the staff. Area-of-concentration programs in endodontics, orthodontics, pedodontics, periodontics, prosthodontics, and biological science research are offered to selected highly qualified students in their fourth year of study.

As a result of the constantly expanding body of knowledge in basic and dental sciences and the need for adequate clinic time, two summer sessions are required: (1) between the second and third years; (2) between the third and fourth years.

Throughout the entire course an effort is made to interrelate the different phases of dental learning by means of "correlative" and "combined" clinics in which the various departments and divisions cooperate in the discussion and demonstration of the same and related problems and thus treat the study of dentistry as a unit rather than a series of isolated branches of learning. At the same time an attempt is made to individualize instruction and to place responsibility as far as practicable upon the student for his or her own training. This is accomplished by the division of classes into modules and review sessions, and by the comprehensive case method of instruction.

Voluntary participation in research projects of the student's choosing and in programs under the guidance of members of the faculty is earnestly encouraged. Members of the William Jarvie Society for Dental Research, the undergraduate research and honor society, undertake individual and team projects under the direction of members of the faculty. Lectures on the principles and practice of research are provided and, in addition, students assist in the execution of studies being pursued by faculty members. A limited number of student research fellowships are available for summer work under the direction of the staff. The scope of student research includes critical reviews of the literature, clinical studies in the techniques of the various disciplines of dentistry, and the evaluation of newer therapeutic agents and dental materials. Work in the basic sciences is encouraged. For a complete description of this program, see *The D.D.S. Program*, below.

Postdoctoral Programs

The School is authorized to grant certificates of training in the specialties of dentistry. Programs for the certificate of training include advanced study in the clinical and basic sciences of dentistry. At present, programs are offered to qualified graduates in dentistry who wish to prepare for specialization in endodontics, orthodontics, pedodontics, and periodontics. These programs are described in detail under *Postdoctoral Programs in Dental Specialties*.

Continuing Education

Consistent with the belief that a lifetime of learning is necessary for continued competence in the health profession and that dental education must be a continuum which extends throughout the professional career, the School of Dental and Oral Surgery offers a program of short courses of varying lengths on diverse subjects.

These continuing education courses are given at irregular times throughout the academic year and are announced by special brochures, notices in journals, and special mailings.

Courses may range in length from one day to one week or may meet weekly for an entire term. They are designed to enable the practitioner to review and continue his or her educational experience in fields where research and its clinical application present constantly changing concepts of prevention, diagnosis, and treatment. These short courses acquaint the participant with the latest advances in the various fields of dentistry.

A number of specially designated courses among those described under *The D.D.S. Program* and *Postdoctoral Programs in Dental Specialties* are offered for *audit* as Continuing Education Courses. These courses are available for attendance by nonmatriculated practitioners and other professionals through the Division of Continuing

Education and are described in the periodic Continuing Education brochure and announcements. They are identified in this bulletin by the letter ^A preceding the course number.

For Visitors and Visiting Scholars to the School of Dental and Oral Surgery

Qualified students are offered the opportunity for guided study, attendance, and observation of clinical and classroom education under the direction of a faculty member for variable periods of the school year not necessarily corresponding to regular academic intervals. Faculty members of other institutions may be granted visiting scholar privileges, which include auditing clinic and classroom courses (as approved by the course instructor), attending lectures, and participating (with the approval of the appropriate faculty member) in seminars.

This course is offered without credit. A special fee is determined after consultation with the Director of Continuing Education, depending on the courses to be audited and the length of time to be spent in attendance. No official records of attendance are kept, and no transcript certifying attendance or work undertaken is provided by the registrar.

Arrangements for enrollment are made directly with the Director of Continuing Education at the address above.

Programs for Dental Hygienists

Columbia offers a bachelor's and a master's degree in dental hygiene. Candidates for the Bachelor of Science degree under the classification of Program A (for the student with two years of college credit) are admitted only in September; candidates for the Bachelor of Science degree under the classification of Program B (for the student with two years of dental hygiene college credit) are admitted in September, January, or July. The program for the M.S. degree provides advanced education in dental hygiene administration, research, and teaching. Please consult *Dental Hygiene Programs*, below, for details of the programs.

Graduate Courses in the Basic Sciences

A limited number of fellowships are available to graduates of accredited dental schools. These fellowships offer opportunity for study in the following basic-science departments of the University: anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. For further information, address the Dean, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032.

Courses Leading to the Degree of Doctor of Philosophy

Graduation from accredited dental schools under the present curriculum of four academic years preceded by three acceptable predental college years is considered by the Graduate School of Arts and Sciences of Columbia University to meet the general requirements for admission. There are additional admission requirements in certain departments. A student who is accepted by the Graduate School as a candidate for the degree of Doctor of Philosophy and who holds the Doctor of Dental

Surgery degree from Columbia University may, with the consent of the Dean, offer the work done for the professional degree in lieu of points toward the fulfillment of the residence requirement for the academic degree. For further information see the bulletin of the Graduate School of Arts and Sciences, which can be obtained by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

Combined Program with the School of Public Health

The School of Dental and Oral Surgery and the School of Public Health offer a joint program leading to the Master of Public Health degree in addition to the D.D.S. degree. Admission to the double degree program requires acceptance first by the School of Dental and Oral Surgery, with subsequent application and admission to the School of Public Health. Each degree is awarded independently when the respective requirements have been met. Students can enter the program at any time during their first two and one-half years and have up to two years after dental school graduation to complete the M.P.H. requirements. The joint program comprises nine academic terms. Tuition for seven of these terms is paid to the School of Dental and Oral Surgery and tuition for the other two terms is payable to the School of Public Health.

This program is designed to graduate students who have the skills of dentistry as well as those of public health. In addition to a foundation in the basic biological sciences and clinical dentistry, students will gain broad insight into the complexities of the evolving health care system in the United States and develop the skills required for them to assume roles as implementers and leaders within that system. Depending on the chosen area of public health concentration, students may develop special competence in epidemiology, biostatistics, health administration, and the sociomedical sciences.

The joint degree program is a major step in the education of interdisciplinary professionals who can be effective as practitioners and interpreters at the interface between dentistry, other health disciplines, and the health system. Graduates of the program are serving currently in administrative posts, the Public Health Service, general practice residencies, specialty residencies, the Armed Services, and private practice.

For further information, consult the Associate Dean for Academic Affairs, School of Dental and Oral Surgery, Columbia University, 630 West 168th Street, New York, N.Y. 10032; telephone (212) 694-3573.

Facilities

The Dental Clinic

The School benefits in many ways through its association with the Medical Center. One of the functions of its clinic is the dental care of patients in the Center hospitals. Students are given a unique opportunity to gain experience in the diagnosis and care of those cases where a relationship exists between oral and general systemic diseases. The student also learns at first hand the problems of providing dental care for the hospitalized patient. The wards and outpatient departments of the Center give close contact and association with all branches of the health services.

The New Dental School Teaching Center

The School of Dental and Oral Surgery has undergone a complete renovation. A modern dental teaching center with expanded facilities for faculty, students, and patients was completed in the autumn of 1977. The new facility permits an increase in class size and provides totally integrated clinics for use by undergraduate dental students, postdoctoral dental students, and dental hygiene students.

The Library

The Health Sciences Library, housed in the Julius and Armand Hammer Health Sciences Center, provides a modern and efficient environment for study and research. The four floors occupied by the library offer a comfortable atmosphere conducive to study, including such amenities as individual study carrels, group study and conference rooms, typing rooms, and a leisure reading lounge.

With more than 360,000 volumes and a staff of forty, the library is one of the largest medical center libraries in the United States. It is well able to serve the needs of faculty, students, and researchers in the various health science disciplines. More than three thousand periodical titles are currently received. An entire floor of the library has been designated as a media center and is equipped with a variety of audiovisual materials. In addition to traditional reference services, the library offers literature searching on several computerized data bases, including MEDLARS.

Other Columbia libraries, located on the Morningside campus at 116th Street, are open to all students and faculty who carry Columbia identification cards. The central library is Butler Library; special and department collections are housed in other buildings on the campus.

Statement of Nondiscriminatory Policies

The University is required by certain Federal statutes and administrative regulations to publish the following statements:

Consistent with the requirements of Title IX of the Education Amendments of 1972, as amended, and Part 86 of 45 C.F.R., the University does not discriminate on the basis of sex in the conduct or operation of its education programs or activities (including employment therein and admission thereto). Inquiries concerning the application of Title IX and Part 86 of 45 C.F.R. may be referred to the University's Equal Opportunity Office (305 Low Memorial Library, New York, N.Y. 10027, telephone 212-280-5511), or to the Director, Office for Civil Rights (Region II), 26 Federal Plaza, New York, N.Y. 10007.

Columbia University admits students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, national and ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

Consistent with the requirements of Section 504 of the Rehabilitation Act of 1973, as amended, and Part 84 of 45 C.F.R., the University does not discriminate on the basis of handicap in admission or access to, or employment in, its programs and activities. Section 503 of the Rehabilitation Act of 1973 requires affirmative action to employ and advance in employment qualified handicapped workers.

The University in addition desires to call attention to other laws and regulations that protect employees, students, and applicants.

Title VI of the Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color, or national origin in programs or activities receiving Federal financial assistance. Title VII of the Civil Rights Act of 1964, as amended, prohibits employment discrimination because of race, color, religion, sex or national origin. Executive Order 11246, as amended, prohibits discrimination in employment because of race, color, religion, sex or national origin and requires affirmative action to ensure equality of opportunity in all aspects of employment.

The Equal Pay Act of 1963 prohibits discrimination on the basis of sex in rates of pay. The Age Discrimination in Employment Act of 1967, as amended, prohibits discrimination in employment on the basis of age.

The Columbia University Senate on December 1, 1978, passed a resolution announcing its general educational policy on discrimination which reaffirms the University's commitment to nondiscriminatory policies in the above-mentioned categories, as well as its policy not to discriminate on the basis of sexual orientation.

Section 402 of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, prohibits job discrimination and requires affirmative action to employ and advance in employment (1) qualified Vietnam era veterans during the first four years after their discharge and (2) qualified disabled veterans throughout their working life if they have a 30 percent or more disability.

The University's Equal Opportunity Office has also been designated to coordinate the University's compliance activities under each of the programs referred to above.

Reservation of University Rights

This bulletin is intended for the guidance of persons applying for or considering application for admission to Columbia University and for the guidance of Columbia students and faculty. The bulletin sets forth in general the manner in which the University intends to proceed with respect to the matters set forth herein, but the University reserves the right to depart without notice from the terms of this bulletin. The bulletin is not intended to be and should not be regarded as a contract between the University and any student or other person.



Key to Course Listings

Each course number of the School of Dental and Oral Surgery consists of a capital letter followed by four digits and the term designation.

The *capital letter D* indicates the School of Dental and Oral Surgery.

The level of the course is represented by *the first digit*:

- 3 Dental hygiene undergraduate course
- 5 First-year course for D.D.S. degree candidates
- 6 Second-year course for D.D.S. degree candidates; dental hygiene graduate course
- 7 Third-year course for D.D.S. degree candidates
- 8 Fourth-year course for D.D.S. degree candidates
- 9 Postdoctoral course

Courses given in the College of Physicians and Surgeons have three-digit numbers; their suffixes, F and S, designate first- and second-year courses in the College curriculum.

D.D.S. Degree Program

In the D.D.S. degree program, the *second and third digits* indicate the subject area. The letter ^E preceding the course number identifies a course as an elective.

00-04	Interdisciplinary correlation	45-49	Orofacial growth and development
05-09	Preventive dentistry		
10-14	Community health	50-59	Orthodontics
15-19	Dental auxiliary utilization	60-69	Pedodontics
20-29	Endodontics	70-79	Periodontics
30-34	Operative dentistry	80-84	Prosthodontics
35-39	Oral biology	85-89	Behavioral science
40-44	Oral surgery	90-99	Stomatology

Postdoctoral Programs

In the postdoctoral programs, the *second digit* indicates the course category:

0	Interdisciplinary correlation	7	Periodontics
2	Endodontics	9	Dental science (core and interdepartmental courses)
5	Orthodontics		
6	Pedodontics		

Dental Hygiene Programs

In Program A, the subject area is indicated by *the second digit*:

0	Basic science	3	Public health
1	Dental science	4	Clinical dental hygiene
2	Education		

In Program B, the subject area is indicated by *the second and third digits*:

52	Dental science	56	Public health
54	Education	58	Clinical dental hygiene

Points of Course Credit: The number of points of credit that a course carries is given in boldface type in the right margin of the course-title line.

The letter ^R preceding the course number indicates that a course is required.

Term Designations: X, Y, Z

An *x* following the four-digit course number means that the course meets in the autumn term; a *y* means the spring term; and a *z* means the summer session.

Courses for Audit

The letter ^A preceding the course number indicates that a course is available for audit as described in *Programs of Study—Continuing Education*, above.





The D.D.S. Program

Admission Requirements

Summary of the D.D.S. Program

Courses of Instruction



Admission Requirements

Candidates may apply after July 1 during the academic year preceding that for which they seek admission; the deadline for receipt of applications is December 1. Application is made through the American Association of Dental Schools Application Service (AADSAS). Application forms for this service can be obtained from the Office of Admissions, from any other participating dental school, or directly from AADSAS, 1625 Massachusetts Avenue N.W., Washington, D.C. 20036; telephone toll-free: (800) 424-2474.

Upon request by the Admissions Office, the applicant must send a check or money order for \$35, made payable to Columbia University, directly to the School of Dental and Oral Surgery. This fee, which covers the cost of processing the application, is required of all prospective students. Those wishing to be considered for a fee waiver should consult with the Office of Admissions and must supply the information necessary to support the waiver request. An application for admission will not be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the School. The fee is not refundable and is not credited toward tuition.

Required preparation: the bachelor's degree from an accredited American institution or its equivalent including the following courses (8 points of each): English composition and literature, physics, biology, inorganic chemistry, and organic chemistry. It is not necessary to complete the academic requirements before applying, but all requirements must be completed before registration. Students are discouraged from applying if they will only have three years of college, as preference is given to applicants with bachelor's degrees.

Recommended preparation: additional courses in chemistry, advanced courses in biology, courses in mathematics, foreign languages, sociology, history, and the fine and industrial arts. The admission of a student depends primarily on preparation and intellectual capacity, but it also depends upon judgments of the student's character.

Interviews: A personal interview is required for admission. Because of the large number of applicants, the interview is by invitation only from the Committee on Admissions. Candidates who are chosen for an interview will be notified by mail, and those applicants living on the West Coast will have the option of being interviewed in California. Further instructions will be given to those candidates by the Office of Admissions.

Dental Aptitude Tests: All applicants must take the Dental Aptitude Tests, which are conducted by the Council on Dental Education at various testing centers throughout the United States and Canada, no later than October of the year during which application is made. For further information, apply directly to the Division of Educational Measurements, Council on Dental Education of the American Dental Association, 211 East Chicago Avenue, Chicago, Ill. 60611.

Acceptance Fee: After receiving notice of acceptance, the applicant must notify the Committee on Admissions that he or she intends to enroll according to instructions specified in the letter of acceptance. The acceptance fee of \$500 is applied to the

applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.

Combined Programs

With Barnard College. Under the "professional option" plan, students from Barnard College may receive the Bachelor of Arts degree from Barnard after the completion of three years of undergraduate work at Barnard and the first year in the School of Dental and Oral Surgery. To be eligible for this privilege, before entering the School the student must have completed 90 points of academic work at Barnard (including all specific requirements), a major of 28 points, and the major examination or thesis.

With the School of General Studies. A limited number of highly qualified students may participate in a professional option program with the School of General Studies that reduces the usual time of study for the D.D.S. degree from eight to seven years. Professional option may be exercised after the completion of 94 points (including all courses prescribed for the Bachelor of Science degree), not less than 64 of which must have been taken at Columbia University. The aim of this joint program is to offer a course of study by which students may reduce the time of preprofessional and professional preparation for dentistry as a means of providing earlier access to practice opportunities of postgraduate training.

Each year the School of General Studies nominates a small number of promising students who are in their first year of preprofessional study. Admission to the program and contingent early acceptance into the dental school is based on the applicant's motivation to enter the field of dentistry, scholastic ability, and personal attributes. Early identification of candidates permits assignment to summer work-study programs in laboratories of the School of Dental and Oral Surgery and elsewhere on the Health Sciences campus. Part of the work-study experience consists of preprofessional tutorials with selected faculty members as preparation for basic biological sciences and provides the student with an introduction to techniques of scientific problem solving. Final acceptance into the School of Dental and Oral Surgery is conditional upon satisfactory completion of a minimum of two years with the School of General Studies under the professional option, including all courses that are prerequisite to the study of dentistry as well as satisfactory performance on the DAT. For further information students should consult with the School of General Studies, Office of Admissions, 509 Lewisohn Hall on the Morningside campus.

Admission with Advanced Standing

Applications for admission with advanced standing are accepted whenever vacancies exist in the third-year class. Only those applicants who have successfully completed three years of study in an accredited dental school and who have passed Part I of the National Dental Board examinations are considered. Graduates of Foreign dental schools who hold dental degrees equivalent to the D.D.S. or D.M.D. degree may be considered for admission on an *ad hoc* basis. Evidence of having passed Part I and Part II of the National Boards Examination is required. A passing grade on the Test of English as a Foreign Language (TOEFL) is also required. TOEFL applications and information may be obtained by writing: Test of English as a Foreign Language, Box 899, Princeton, N.J. 08541.

Summary of the D.D.S. Program

Because of revisions in curriculum, the following outline reflects the tentative program for the years 1981-1983.

First Year

Anatomy 101F, 102F-102S, 103F
Behavioral science D5851
Biochemistry 101F
Interdisciplinary correlation D5002
Microbiology 101F

Nutrition 101F
Orofacial development D5450-D5451
Pathology 101F
Physiology 101F

Second Year

Behavioral science D6851
Community health D6101
Endodontics D6201
Interdisciplinary correlation D6010
Neural science 106S
Operative dentistry D6300-D6301
Oral biology D6350, D6352
Oral and maxillofacial surgery D6401,
D6402
Orofacial development D6361,
D6452, D6453, D6454

Orthodontics D6501
Pathology 102S, D6371-D6372
Pedodontics D6651
Periodontics D6701
Pharmacology 101S
Preventive dentistry D6051, D6052,
D6830
Prosthodontics D6800-D6801
Radiology D6902



Third Year

Behavioral science D7851
 Community health D7101, D7102
 Dental auxiliary utilization
 D7150-D7151
 Endodontics D7201-D7202
 Operative dentistry D7301-D7302
 Oral and maxillofacial surgery D7351,
 D7401-D7402, D7411, *D7421
 Orthodontics D7501-D7502

Pedodontics D7651-D7652
 Periodontics D7701-D7702
 Preventive dentistry D7051-D7052
 Prosthodontics D7801-D7802,
 D7830
 Radiology D7931
 Stomatology D7361, D7902,
 D7911-D7912, D7921,
 D7941-D7942, D7943

Fourth Year

Community health ^ED8111-D8112,
 *D8121
 *Dental auxiliary utilization
 D8151-D8152, D8171-D8172
 Endodontics D8201-D8202,
 ^ED8211-D8212
^EInterdisciplinary correlation
 D8001-D8002
 Operative dentistry D8301-D8302
 *Oral and maxillofacial surgery D8401
 *Orofacial development
 D8461-D8462
^EOrthodontics D8511-D8512

Pedodontics D8451-D8452,
 ^ED8661-D8662
 Periodontics D8701-D8702,
 ^ED8711-D8712
 Preventive dentistry D8051-D8052,
 ^ED8061-D8062
 Prosthodontics D8801-D8802,
 ^ED8810-D8811, D8830
 Stomatology D8361-D8362,
 *D8902 (same course
 as D7902)

Areas of Concentration

Programs are available to qualified fourth-year students in the following areas: biological sciences, endodontics, orofacial development, orthodontics, pedodontics, periodontics, prosthodontics, and public health. Programs in orthodontics, pedodontics, and prosthodontics are described below; the other programs are individually arranged.

Orthodontics

This is essentially the same as the first-year postdoctoral program in orthodontics and is open to one or two students a year as determined by the Third Year Class Committee. Instruction in the basic and applied sciences, in related medical subjects, and in the theory and practice of orthodontics is provided by lectures, seminars, laboratory exercises, and clinical practice. Emphasis is on diagnostic procedures and treatment planning and the application of clinical methods best designed to meet the treatment objectives for the individual patient.

Instruction includes the theory and methodology of treatment with various appliances: removable, labiolingual, twin-wire, extraoral forces, edgewise, and the

*Not required of students in areas of concentration.

Begg Appliance. The purchase of a kit of instruments and supplies costing approximately \$1,500 is required.

The program is structured as follows:

1. At the beginning of the student's fourth year, the student temporarily discontinues the predoctoral program for the period September through December and attends a number of graduate level courses in the orthodontics program on a full-time basis.

2. Beginning in January, the student resumes the predoctoral program, which has provision for one day of elective time. This elective time is spent taking courses in the postdoctoral orthodontics program.

3. The predoctoral graduation date (that is, the receipt of the D.D.S. degree) depends upon the student's progress. It may be the normal graduation date, or it may be delayed until the satisfactory completion of all predoctoral requirements.

4. Upon successful completion of the predoctoral program and the graduate courses taken, the student enters the postdoctoral orthodontics program with advanced standing and remains in attendance until all postdoctoral requirements are completed (usually one full calendar year). A written thesis based upon original research under the direction of members of the staff is required. A Certificate of Training in Orthodontics is awarded upon completion. This qualifies the student for membership in the American Association of Orthodontists and to take the certification examination of the American Board of Orthodontics.

Pedodontics

The Division of Pedodontics offers a special area of concentration program during the fourth year. This program begins with an "expanded elective" during the first term for students with an excellent third-year performance. At the end of the first term, students who continue to perform with excellence are considered for early graduation by the Class Committee. If approved, students then begin full-time activities as postdoctoral students in the Division of Pedodontics at the beginning of the second term. One remaining half-day a week in the second term is devoted to activities in general dentistry. Upon satisfactory completion of this special program, the student is eligible to enter the second and final year of the pedodontics postdoctoral training program. The program is approved by the Council on Accreditation and makes the graduate eligible for American Academy of Pedodontics membership and for taking the American Board of Pedodontics Examination. The second year is somewhat modified in length to meet minimum time requirements for such a program.

The didactic components of the program include pediatric medicine, preventive techniques, developmental psychology, nutrition, postdoctoral pedodontic clinical seminars, interceptive orthodontics, growth and development, and hospital dentistry protocol.

The clinical portion includes dentistry for handicapped children and adults; special management techniques, including per oral sedation, nitrous oxide, I.V. and I.M. management, extensive caries control techniques, pulpal therapies, the treatment of abnormalities of occlusion, the identification and treatment of dental developmental disorders, an anesthesiology rotation, and pediatric emergency room exposure.

Prosthodontics

In this program, selected students spend 80 percent of their fourth year in prosthodontics. Selected core graduate courses are taken in addition to participation in lectures

and seminars in prosthodontics. Clinical experience is directed toward in-depth knowledge of periodontal-prosthetic problems. Emphasis is placed on an interdisciplinary approach of prosthodontics with periodontics, endodontics, and orthodontics. Wherever possible, the student is expected to carry out a research project in some aspect of prosthodontics.

Required Summer Clinics

These sessions are held in June and July.



Courses of Instruction

In the following course listings where the name of the subject or area of studies does not appear before the course number it is understood to be the same as the heading preceding each group of courses.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Anatomy

101F. Microscopic anatomy

Professor Nunez and staff. First year.

Lectures, conferences, and laboratory dealing with the analysis of biological structure necessary for understanding the function of cells, tissues, and organs.

102F-102S. Human anatomy

Professor Moss and staff. First year.

Individual regional dissections of the complete body, augmented by lectures stressing functional interpretations. Lectures correlate developmental anatomy with gross anatomy.

103F. Developmental anatomy

Professor Pfenninger and staff. First year.

Lectures on selected topics in human developmental anatomy.

Anatomy-Physiology 106F. Neural science

Professors Kandel, Kelly, K. Weiss, Kupferman, Rowland, and Schwartz. Second year.

An interdisciplinary course designed to provide an integrated background in anatomy, behavior, biochemistry, and physiology of the nervous system.

Behavioral Science

D5851x. Human behavior

Professors Wotman, Jewett, and J. Weiss, and staff. First year.

Small group seminars utilizing common experiences to examine basic aspects of normal human behavior.

D6851y. Human behavior

Professors Wotman, Jewett, and J. Weiss, and staff. Second year.

Small group seminars utilizing common experiences to examine dentist-patient relationships in the school and in a practice environment.

D7851y. Behavioral problems in clinical practice

Professors Wotman and J. Weiss, and staff. Third and fourth years.

A case study course presented as part of the modular practice review. Examines the interpersonal issues in clinical care requiring the student to exercise judgment and determine a cause of action.

Biochemistry

101F. Introductory biochemistry

The staff. First year.

A survey of the chemical constituents of the mammalian cell and their metabolic activities; energy production in the cell, and its role in the synthesis of biological macromolecules; biosynthesis of nucleic acids and proteins; regulation of nucleic acid and protein synthesis.

Community Health

D6101x. Epidemiology

The staff. Second year.

Lectures and seminars in epidemiology and its role in disease prevention and community health. Major focus on dental and oral disease.

^AD7101y. Health care delivery systems and dental practice

The staff. Third year.

Lectures in organization and financing of health care. Overview of public and private sectors of dental care, with emphasis on third-party insurance, group practice models, peer review and PSRO, manpower, legislation, and projected programs.

D7102y. Community health rotation

Professor H. Goldman and Ms. Brandon. Third year.

Students are required to spend one-half day each term in the field providing dental and oral cancer screenings.

D7130x-D7131y. Family practice

Professor H. Goldman and Ms. Brandon. Third year.

Lectures and clinical conferences stressing the coordination, management, clinical, and psychosocial aspects of family-oriented primary dental health care.

^ED8111x-D8112y. Public health community dentistry elective

The staff. Fourth year.

Students assigned to various extramural health centers, hospitals, and institutions to provide care, to identify with various types of health care delivery systems, and to increase their social sensitivity to various communities and population groups. Tutorial seminars for selected students from the School of Public Health, and for students enrolled in the DDS/MPH program, the M.S. degree program in the Division of Dental Hygiene, and fourth-year dental students.

^AD8121y. Ethics, jurisprudence, and forensic dentistry

The staff. Fourth year.

An overview of the laws and regulations governing dental practice, professional responsibility, controls, practice agreements, and the role of forensic dentistry in modern dental practice.

D8130x-D8131y. Family practice

Professor H. Goldman and Ms. Brandon. Fourth year.

A continuation of *Community Health D7130-D7131*.

Dental Auxiliary Utilization

D7150x-D7151y. D.A.U.

Professor D. Kaplan and staff. Third year.

Lectures, demonstrations, and clinical experience in four-handed, sit-down dental service delivery; the effective utilization of chairside dental assistants; patient and dental team positioning; sequential instrumentation; equipment and space criteria.

D8151x-D8152y. Introduction to dental practice management**Professors Kadish and Kaplan. Fourth year.**

Lectures and discussions examining the elements, selection criteria, and entry requirements of the various dental practice modes, self-employed or salaried. Planning techniques for establishing, managing, and building a dental practice, with economic strategies, explored.

D8171x-D8172y. T.E.A.M.**Professor Tolpin and staff. Fourth year.**

Lectures, seminars, and clinical experience in the principles and practices of management of expanded function auxiliaries.

Endodontics

D6201y. Endodontics theory and technique**Professors Moreinis, Leavitt, and Naidorf, and staff. Second year.**

Lectures and seminars on the fundamentals of endodontics. Demonstrations and exercises in endodontic technique on extracted teeth.

D7201x-D7202y. Basic clinical endodontics**Professor Moreinis and staff. Third year.**

Demonstrations and clinical experience in the practice of endodontics.

D8201x-D8202y. Advanced clinical practice**Professor Moreinis and staff. Fourth year.**

Lectures and clinical experience in advanced problems in endodontic theory and technique.

D8211x-D8212y. Endodontics elective**Professor Greenfield and staff. Fourth year.**

Seminars, demonstrations, and clinical experience in advanced endodontic theory and technique.

Interdisciplinary Correlation

D5002y. Introduction to dentistry**Professor Rosenblum and staff. First year.**

Lectures, demonstrations, clinical observation, and experience designed to define the scope of dentistry early in the career of the dental student. Correlation between the preclinical and clinical disciplines is an integral part of the course content.

D6010y. Introduction to clinical practice**Professors R. Goldman, Scrivani, and Uccellani. Second year.**

Introductory seminars preparing the student for clinical experience.

D8001x-D8002y. Individualized elective**The staff. Fourth year.**

An elective program designed to meet the needs of the student in an area appropriate to his or her educational goals as arranged by the Third Year Class Committee.

Microbiology

101F. General medical and dental microbiology**The staff. First year.**

Conferences.

Nutrition

101F. Introduction to nutrition

Professor Winick and staff. First year.

Lectures covering nutrient deficiencies, nutrient excess, nutrition during special periods of life, and foods in general and therapeutic diets.

Operative Dentistry

D6300x-D6301y. Introductory operative dentistry

Professors Cain, Brzustowicz, and Boelstler, and staff. Second year.

Lectures and laboratory exercises on the fundamentals of operative dentistry, including the etiology of dental caries and the biological approach to the technical procedures in the restoration of teeth. Periods of clinical observation are an integral part of the course.

D7301x-D7302y. Operative clinical practice

Professors Cain, Brzustowicz, Scrivani, Boyd, and Boelstler, and staff. Third year.

Introduction to the clinical practice of operative dentistry. Lectures, demonstrations, and clinical experience in the recognition of disease and related conditions. Prevention, treatment planning, and restoration to form and function on a comprehensive care basis.

D8301x-D8302y. Advanced clinical practice

Professors Boelstler, Boyd, Cain, Brzustowicz, and Scrivani, and staff. Fourth year.

A continuation of *Operative Dentistry D7301-D7302*, with the addition of seminars in the special problems of operative dentistry, with emphasis on total patient care, and preparation for clinical board examinations.

Oral Biology

D6350x. Cariology

Professors Ellison and I. Mandel. Second year.

Lectures and seminars on dental caries. Survey of the literature dealing with the anatomical, biochemical and microbiological aspects of dental caries. Emphasis is placed upon current investigations.

^AD6352y. Biology of the oral tissues

Professor Ellison and guests. Second year.

Lectures and seminars supplementing the more general information of the basic science courses with specific material related to dentistry. Such topics as taste, bone metabolism and calcification, oral and pulpal microcirculation, and microbiology related to periodontal disease are considered.

Oral and Maxillofacial Surgery

D6401x. Pain control

Professor Solomon. Second year.

Lectures in the understanding of pain and its control by means of local anesthesia. Emphasis will be placed upon the anatomy, physiology, and pharmacology of local anesthesia.

**D6402y. Introduction to oral and maxillofacial surgery**

Professors L. Mandel, Minervini, Baurmash, Roser, and staff. Second year.

Lectures and clinical experience to prepare students for basic oral surgery procedures. The armamentarium, techniques, and complications of exodontia are stressed.

^AD7351y. Functional anatomy of the head and neck

Professor Loscalzo. Third year.

Lectures and clinical demonstrations on the diagnosis and treatment of diseases and disorders associated with pain of nonodontogenic origin. Discussion of basic pain mechanisms.

D7401x-D7402y. Basic oral surgery

Professors L. Mandel, Minervini, Loscalzo, Baurmash, Roser, and staff. Third year.

Lectures and clinical experience in operative procedures other than exodontia that would be performed in an ambulatory oral surgery setting.

D7411x. Pain control

Professor Solomon. Third year.

Lectures, demonstrations, and practical application of pain control utilizing various modalities of sedation, analgesia, and general anesthesia.

D7421y. Summer externship elective

The staff. Third year.

Externships of varying length are offered on a voluntary basis during the summer at selected metropolitan hospitals. The student has the opportunity to become involved with all aspects of dentistry as delivered in a hospital environment.

D8415x-D8416y. Oral and maxillofacial surgery elective

Professors L. Mandel, Minervini, Roser, and staff. Fourth year.

Elective course for a limited number of students. An integrated program of advanced clinical and didactic training and experience in oral surgery. Students rotate through the School's oral surgery clinic and the oral surgery services of selected metropolitan hospitals. Seminars in otolaryngology, salivary gland diseases, and the temporomandibular joint.

D8401y. Extramural clinical clerkship

Professor Minervini. Fourth year.

Six-week assignment of students to remote site delivery settings, i.e., metropolitan hospitals, to increase the student's consciousness of dental manpower needs and opportunities in underserved communities and population groups. To provide an effective clinical experience in the general practice of dentistry at a facility other than the formal school surroundings.

Orofacial Development

D5450x-D5451y. Oral anatomy and occlusion

Professors Lighter and Horowitz, and staff. First year.

Lectures and laboratory sessions in oral anatomy, dental morphology, phylogeny of the dentition, and dental occlusion.

D6361x. Oral microscopic anatomy and embryology

Professor Moss-Salentijn and staff. Second year.

Lectures, conferences, and laboratory on the detailed microscopic anatomy and development of the dental and associated orofacial structures.

D6452x. Orofacial growth and development

Professor Horowitz. Second year.

Lectures in patterns of human development with emphasis on facial growth, the timing and sequence of eruption, phylogeny of the dentition, and the development of dental occlusion.

D6453x. Human genetics in dentistry

The staff. Second year.

Lectures designed to familiarize the student with principles of Mendelian heredity, cell division, inborn errors of metabolism, chromosomal anomalies, and the genetics of orofacial syndromes.

D6454x. Statistics

The staff. Second year.

Lectures and programmed instruction in basic biostatistics, including measures of central tendency, regression, correlation, Chi-Square, and comparison of samples.

D8461x-D8462y. Orofacial development elective

Professor Horowitz and staff. Fourth year.

An individualized study program in child development, with special emphasis on growth patterns of the dentofacial complex. The child development laboratory provides an opportunity for student experience in research design, exploration of genetic factors in dental anomalies and disease, practical applications of statistical analytic techniques, and clinical observation of various craniofacial birth defect syndromes.

Orthodontics

D6501y-D7501x-D7502y. Principles of orthodontics

Professor Di Salvo and staff. Second and third years.

Lectures, seminars, laboratory, and clinic. Orthodontic fundamentals, with special emphasis on prevention and interception of malocclusion by the early recognition and correction of the predisposing factors. Appliances used in preventive, interceptive and minor corrective orthodontic procedures are constructed in the laboratory and used in the clinic.

^ED8511x-D8512y. Orthodontic elective

Professor Di Salvo and staff. Fourth year.

Seminars and clinic participation. A more detailed exposure to the etiology, diagnosis, case analysis, treatment planning, and clinical management of problems of malocclusion.

Pathology

101F. General pathology

Professors King and J. Fenoglio, and staff. First year.

The same course as that given to medical students, including lectures and laboratories emphasizing the mechanisms of injury and repair in cells, tissues, and organ systems.

102S. Systemic pathology**Professors King and J. Fenoglio, and staff. Second year.**

The same course as that given to medical students, including lectures, seminars, and laboratory exercises using clinical case material, gross specimens, and light microscopic studies to elucidate the pathogenesis of findings in disease.

D6371x-D6372y. Oral pathology**Professor Blake and staff. Second year.**

Lectures, demonstrations, conferences, and laboratory work on diseases of the oral cavity and contiguous structures including the jaws, teeth, and soft tissues. Emphasis on clinical manifestations and histopathology of the various diseases.

Pedodontics

D6651y. Fundamentals of pedodontics and preventive dentistry**Professor Davis and staff. Second year.**

Lectures on morphology and chronology of the primary and mixed dentition, cavity preparation, pulp therapy, stainless-steel crown preparation, and other related clinical procedures. The preclinical laboratory involves basic pedodontic operative techniques on primary and young permanent teeth and the handling of various restorative materials, including amalgam and composite adhesive systems. At the end of the course the student is prepared to begin clinical pedodontics.

D7651x-D7652y. Theory of pedodontics**Professor Davis and staff. Third year.**

Lectures and seminars on diagnosis and treatment planning for the primary and mixed dentition. Emphasis is placed on consideration of the entire child from psychological, medical, and oral health perspectives. Emphasis is placed on appropriate preventive measures, patient management, care of trauma, adhesive restorative techniques, space maintenance, and interceptive and preventive orthodontic procedures for children and adolescents. The clinical phase of the course meets once weekly and concentrates on the application of the preceding principles.

D8451x-D8452y. Treatment of the handicapped program**Professor George and staff. Fourth year.**

Lectures and clinical experience in treating patients who have various types of handicapping conditions.

^ED8661x-D8662y. Pedodontic elective**The staff. Fourth year.**

Serves to expand the experience of the third-year pedodontics course with more complex management and treatment planning cases. Experience with the handicapped child and with special management aids such as nitrous oxide and other forms of sedation is provided. Occasional case discussion seminars and involvement with the postgraduate guest lecture series. One or two (preferred) half days.

Periodontics

D6701y. Lectures and clinic**Professors Gottsegen and Schwartz, and staff. Second year.**

Lectures and seminars in the diagnosis, etiology, and treatment of periodontal diseases. Clinical practice in examination and documentation of clinical findings in the periodontal patient; prophylaxis, subgingival scaling and root planing; teaching and motivating patients to perform personal oral hygiene. The fundamentals of preventive periodontics are covered.

D7701x-D7702y. Clinical practice of periodontics**Professors Gottsegen and Schwartz, and staff. Third year.**

Lectures and seminars on periodontal surgery, occlusal traumatism, occlusal adjustment, specific periodontal diseases and infections, systemic background factors and interrelationships, methods of temporary stabilization of teeth, introduction to treatment planning, and case presentation both in seminar and clinic. Clinical practice in subgingival curettage, simple surgical techniques, occlusal adjustment by selective grinding, and temporary stabilization.

D8701x-D8702y. Advanced periodontics**Professors Gottsegen and Schwartz, and staff. Fourth year.**

Prosthodontics area of concentration students take one-half day per week, each term. Clinical experience is a continuation of *Periodontics D7702*. Lectures and seminars tracing the historical development of treatment methods, advanced surgical techniques, special therapeutic problems, fixed and permanent splinting and restorative dentistry for the periodontally involved dentition. A review of periodontal histopathology and physiology related to clinical experience; treatment planning, case management, and case presentation. Emphasis on the clinical management of more complex cases than in the third year.

^ED8711x-D8712y. Periodontics elective**Professors Gottsegen and Lubarr, and staff. Fourth year.**

One seminar and choice of one or two clinic sessions a week. Students participate in seminars with subject material researched through literature review and critical analysis. Clinical experience is directed toward enlarging and enhancing the usual four-year periodontics program through the assignment of difficult and complex cases of diagnosis, treatment planning, and therapeutic management. Opportunity and encouragement given for research.

Pharmacology

101S. General and special pharmacology**Professor Kahn and staff. Second year.**

A rigorous course which features lectures, laboratories, and discussions dealing with traditional drugs used in dental and medical practice, as well as newer agents. A thorough understanding of the material presented in this course will add interest to the student's future dental practice and will help the student to render a more effective service to patients.

Physiology

Anatomy-Physiology 106F. Neural science**Professors Kandel, Kelly, K. Weiss, Kupfermann, Rowland, and Schwartz. Second year.**

An interdisciplinary course designed to provide an integrated background in anatomy, behavior, biochemistry, and physiology of the nervous system.

101F. Human physiology**Professor Nocenti and staff. First year.**

Lectures, conferences, demonstrations, and laboratory. The function of the various organ systems of the mammalian body and their interrelations.

Preventive Dentistry

D6051x. Scope of preventive dentistry**Professor I. D. Mandel and staff. Second year.**

Lectures and seminars on etiology, histopathology, measurement, and prevention of the plaque diseases—caries and periodontal disease, and on interrelationships between prevention and all areas of dentistry.

D6052y. Techniques of preventive dentistry**Professors Stuchell and R. Goldman, and staff. Second year.**

Lectures, seminars, and clinical exercises on the procedures of preventive dentistry.

D7051x-D7052y. Practice of clinical preventive dentistry**Professors R. Goldman and Stuchell, and staff. Third year.**

Clinical training in the procedures of preventive dentistry with emphasis on the plaque diseases.

D8051x-D8052y. Practice of clinical preventive dentistry**Professors R. Goldman and Stuchell, and staff. Fourth year.**

Integrating preventive dentistry into total patient care.

^ED8061x-D8062y. Preventive dentistry research elective**Professor I. D. Mandel and staff. Fourth year.**

Seminars and research project.

Prosthodontics**D6800x-D6801y. Preclinical prosthodontics****Professors Vero and Tepper, and staff. Second year.**

Lectures, demonstrations, and audiovisual aids on the theory and procedures in the design and fabrication of fixed, removable, and complete prostheses. In preparation for the clinical performance of prosthodontics, as many procedures as possible are simulated by the students on models in the laboratory.

D6830x. The manipulation and handling properties of dental materials**Professor Rosenblum. Second year.**

A lecture series concerning the manipulation, chemical composition, and handling properties of all materials used in the preclinical courses of the Operative and Prosthodontics divisions.

D7801x-D7802y. Core clinical prosthodontics**Professor Lucca and staff. Third year.**

Lectures, demonstrations, and clinical experience in the biological principles and practice of the more simple prostheses in all phases of prosthodontics—fixed and removable. In the latter part of the year, lectures are given by staff and guest lecturers on different concepts of occlusion and other schools of thought on various aspects of prosthodontics including maxillofacial prosthesis and implant procedures.

D7830x. Physical properties and the effects of mishandling dental materials**Professor Rosenblum. Third year.**

A lecture series covering the important physical properties of dental materials, and the effect of improper manipulation on those physical properties.

D8801x-D8802y. Advanced prosthodontics**Professor Lucca and staff. Fourth year.**

Advanced clinical experience in the biologic principles and practice of fixed and removable prosthesis. Wherever possible, small seminars are conducted utilizing student cases for presentation and learning experiences.

^ED8810x-D8811y. Prosthodontic electives**Professors Goldin, Scarola, Freeman, and Abelson, and staff. Fourth year.**

Lectures, demonstrations, seminars, and clinical experience in cases presenting unusually diverse clinical problems. Emphasis on developing skills with techniques which are not emphasized in the general prosthodontic courses. Several electives are offered each year emphasizing different aspects of prosthodontic care. Wherever possible, the student is expected to carry out a research project in some aspect of prosthodontics.

D8830x. New developments and the selection of dental materials
Professor Rosenblum. Fourth year.

A lecture series dealing with new developments in dental materials and the interpretation of new product literature as an aid to selecting new dental products for clinical use.

Prosthodontics Area of Concentration

For a general description of the program, see *Summary of the D.D.S. Program—Areas of Concentration*. New courses in prosthodontics are described below. In addition, core courses are selected from the following, described in full under the appropriate designation: *Dental Science D9908—Clinical stomatology conferences, D9915—Psychiatry and psychosomatic medicine, and their interrelationships with dentistry; Operative Dentistry D8301-D8302—Advanced clinical practice; Oral Surgery D8401—Extramural Clinical clerkship; Periodontics D8701-D8702—Advanced periodontics, D9723—Treatment planning in periodontics, D9726—Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics; Preventive Dentistry D8051-D8052—Practice of clinical preventive dentistry; Prosthodontics D8810—Prosthodontic elective, and D8830—New developments and the selection of dental materials.*

D8840x-D8841y. Prosthodontic concentration clinic

Professors Grayson and Widrow, and staff.

Faculty members and students are on a one to three basis for the 21 hours per week spent in this clinic throughout the year. Chairside treatment planning and treatment of extensive complicated periodontal-prosthodontic cases is the basic emphasis of this clinic. Each student has the opportunity of reviewing all other cases being treated.

D8842x-D8843y. Prosthodontic literature review

Professor Grayson. Once a week.

Selected articles in all phases of fixed prosthodontics are reviewed and discussed in seminar.

D8844x-D8845y. Overview of periodontics for the prosthodontist

Professor Winter. First term.

Weekly lecture and seminar covering periodontics, from the preparation of the mouth and surgical procedure to follow up and home care.

D8846x-D8847y. Prosthodontic minor tooth movement

Professor Gieger. Once a week.

Seminar on practical application of orthodontics to reconstruction procedures.

D8848x-D8849y. Prosthodontic guest lecture series

Professor Widrow and guests. Once a week.

Seminars chaired by outstanding dental specialists with emphasis on prosthodontic application.

D8850x-D8851y. Prosthodontic-periodontal treatment seminar

Professor Grayson and staff. Once a week, second term.

Each case is presented by both disciplines and discussed in detail from both perspectives.

Radiology

D6902y. Dental radiology

Mr. Misiak and dental radiology staff. Second year.

Lectures on the pertinent basic concepts of dental radiology and their applications in clinical practice. Introduction to radiographic techniques and the fundamentals of radiation safety. Exercises in dental radiographic interpretation.

D7931y. Dental radiology clinic**Mr. Misiak and dental radiology staff. Third year.**

Clinical practice in intraoral and extraoral radiography. Demonstrations of selected extraoral techniques.

Stomatology

D7902y. Clinical stomatology conferences**Professor D. J. Zegarelli and stomatology staff. Third year.**

These weekly conferences consist of the presentation of case histories having interesting and diagnostically challenging diseases of the mouth and jaws. The diagnosis and treatment of each case are discussed by and with the audience, the latter including undergraduate dental students, dental hygiene students, postgraduate students, residents, practitioners, and faculty. *Weekly one-hour conferences (16).*

D7911x-D7912y. Clinical oral pathology and oral diagnosis clinic**Professor D. J. Zegarelli and staff. Third year.**

Lectures on diagnostic methods and techniques, diseases of the jaws, and diseases of the soft tissues. Clinical experience in mouth examination, history taking, diagnosis of soft and hard tissue diseases, and treatment planning.

D7913y. Facial pain**Professor Marbach. Third year.**

Lectures and clinical demonstrations on the diagnosis and treatment of diseases and disorders associated with pain of non-odontogenic origin. Discussion of basic pain mechanisms.

D7921y. Clinical cancer training**Professor Kutscher and staff. Third year.**

Lectures and clinical experience in the diagnosis and treatment of tumors of the head, face, and neck. The student is rotated for one week through the otolaryngology, radiotherapy, dermatology, and maxillofacial prosthesis clinics. Operating room experience in the surgical management of tumors is included.

^AD7941x-D7942y. General survey of medicine**Professor M. Marder and Presbyterian Hospital staff. Third year.**

The important aspects of internal medicine, with reference to fundamentals as well as to recent diagnostic and therapeutic advances. Particular emphasis on overall medical problems and their implications for dentistry.

D7943x. Oral medicine**Professor M. Marder and staff. Third year.**

Lectures on the management and treatment of selected diseases of the mouth and jaws, including choice of drugs, models of administration, contraindications, and side reactions. The systemic implications of orodental therapy, the dental management of systemically ill patients, and other medicodental relationships are emphasized.

^ED8902y. Clinical stomatology conferences**Fourth year.**

The same course as *Stomatology D7902*.

^ED8961x-D8962y. Facial pain elective**Professor Marbach. Fourth year.**

Individual training in the diagnosis and treatment of facial pain and TMJ disorders, with clinical supervision.



Postdoctoral Programs in Dental Specialties

Admission Requirements

Summary of Programs

Courses of Instruction

Fellowship and Postdoctoral
Programs in Basic Sciences



Admission Requirements

To be admitted to any program, an applicant must be licensed to practice dentistry. Foreign students may be required to demonstrate sufficient knowledge of English and to pass a clinical competence examination. It is required that all students who have received their dental education at schools outside of the U.S.A., Canada, and England submit scores of achievement in the "Test of English as a Foreign Language" (TOEFL) examination as a part of their application.

When to apply: before December 1, for admission in the following September. The Postdoctoral Admissions Committee gives preference to applicants who present evidence of one of the following qualifications: (a) two years of experience in dental practice (service as a dental officer in the federal services fulfills this qualification), (b) completion of an internship of twelve months or more, or (c) completion of at least twelve months of university graduate or postgraduate work in dentistry, a basic science, or an allied field.

Admission procedure: use the application form attached to this bulletin or write to the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032, for an application form, which must be completed and returned. The completed form should be accompanied by the application fee of \$35. This fee is required of all prospective students. Payment may be waived, but only in certain individual cases of extreme hardship. Those wishing to be considered for a fee waiver on this basis should consult with the Postdoctoral Admissions Committee and should supply the information necessary to support the waiver request. An application for admission cannot be considered until the fee has been paid or until it has been waived by formal action of the admissions authorities of the School. The fee is not refundable and is not credited toward tuition. As requested in the form, the applicant should ask each of the colleges or universities attended—for both preprofessional and professional studies—to send official transcripts of the record direct to the director of the postgraduate division to which the applicant is seeking admission. Official proof of current licensure should also be submitted.

Personal interview: if practicable, the Postdoctoral Admissions Committee may ask an applicant to come to the School for a personal interview.

Acceptance fee: within two weeks after receiving notice of acceptance, the applicant must notify the Committee that he or she intends to enroll and must send a check or money order for the amount specified in the acceptance letter, made payable to Columbia University. This acceptance fee is credited to the applicant's tuition upon registration in the class to which he or she has been admitted. If the applicant does not register in that class, the acceptance fee will be retained by the University.



Summary of Postdoctoral Programs

These programs lead to a board-qualifying certificate of training and are based on the need for specially qualified practitioners of dentistry. They provide opportunities for advanced study in special fields. The education received may be credited toward specialization.

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time.

Program in Endodontics

A two-year, full-time, board-qualifying program designed to prepare dentists for specialized practice and teaching in endodontics. Included are lectures, seminars, and laboratory courses in the basic sciences as well as in endodontics and related areas of dentistry. Clinical demonstrations, instruction, and experience in all phases and techniques of operative endodontics—conservative and surgical—are provided. Participants also receive experience in undergraduate endodontic teaching and in research.

Complete descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn term

- D9200 Theory and practice of endodontics
- D9204 Endodontic anatomy and technic
- D9205 Clinical practice in endodontics
- D9210 Review of endodontic literature
- D9217 Surgical endodontics
- D9227 Guest lecture series
- D9900 Research methodology
- D9905 Oral medicine and clinical oral pathology
- D9911 Functional anatomy of the head and neck
- D9912 Anatomy of the head and neck
- D9913 Radiology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationships with dentistry
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9951 Periodontal wound healing seminars
- D9965 Microbiology and immunology

Spring Term

D9201, D9206, D9211, D9218, and D9228 are offered in the spring term of the first year. They are continuations of courses offered in the autumn term.

- D9215 Endodontic-periodontic relationships
- D9901 Cariology
- D9908 Clinical stomatology conferences
- D9914 Theory and practice of periodontics

Summer Session

Endodontics D9209 Clinical practice in endodontics

Second Year

Autumn Term

D9202, D9207, D9212, D9219, and D9229 are offered in the second year. They are continuations of courses offered in the first year.

- D9216 Pulp biology
- D9221 Thesis

Spring Term

D9203, D9208, D9213, D9220, D9222, and D9230 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9910 Clinical stomatology conferences
- D9923 Pharmacotherapeutics
- D9952 Periodontal wound healing seminars

Program in Orthodontics

This is a two-year, full-time program designed to meet the educational requirements of the American Board of Orthodontics and to prepare dentists for specialization in orthodontics. Instruction in the basic and applied sciences, in related medical subjects, and in theory and practice of orthodontics is provided by lectures, seminars, laboratory exercises, and clinical practice. Emphasis is on diagnostic procedures and treatment planning and the application of clinical methods best designed to meet the treatment objectives for the individual patient.

Instruction includes the theory and practice of treatment with various appliances: removable, labiolingual, twinwire, extraoral forces, edgewise, and the Begg Appliance. Satisfactory completion of clinical training and preparation of a thesis based upon original research, under the direction of members of the orthodontic staff, are required.

See *Academic Calendar* for registration dates and for dates on which classes begin. For complete descriptions of courses see *Courses of Instruction*, below.

First Year

Autumn Term

- D9500 Orthodontic technic
- D9501 Clinical orthodontic practice
- D9507 Biomechanics
- D9511 Dental anthropology and evolution

- D9515 Orthodontic literature review
- D9519 Dental materials
- D9521 Theory and practice of orthodontics
- D9900 Research methodology
- D9911 Functional anatomy of the head and neck
- D9912 Anatomy of the head and neck
- D9913 Radiology
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9956 Introduction to orthodontics
- D9957 Cephalometrics, growth and development
- D9958 Orthodontic diagnosis and treatment planning

Spring Term

D9502, D9516, D9522, and D9959 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9525 Thesis
- D9901 Cariology
- D9903 Orofacial growth and development
- D9914 Theory and practice of periodontics
- D9919 Genetics

Summer Session

D9503 and D9526 are offered in the summer session. They are continuations of courses offered in the spring term.

Second Year

Autumn Term

D9527 is offered in the autumn term and is a continuation of a course offered in the summer session.

- D9504 Clinical orthodontic practice
- D9509 Orthodontic diagnosis and treatment planning
- D9517 Orthodontic literature review
- D9523 Theory and practice of orthodontics
- D9904 Craniofacial anomalies
- D9905 Oral medicine and clinical oral pathology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationship with dentistry
- D9916 Temporomandibular joint disorders
- D9917 Temporomandibular joint dysfunction and myofascial pain dysfunction problems

Spring Term

D9505, D9510, D9518, D9524, D9528, and D9918 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9508 Practice management in orthodontics
- D9513 Public health aspects of orthodontics
- D9514 Oral and maxillofacial surgery related to orthodontics
- D9520 The cleft-palate patient
- D9902 Pediatrics related to dentistry
- D9910 Clinical stomatology conferences
- D9955 Speech pathology and therapy
- D9961 Maxillofacial follow-up clinic

Summer Session

D9506 and D9529 are offered in the summer session. They are continuations of courses offered in the spring term.

Program in Pedodontics

The two-year, full-time Pedodontic Program leading to a Certification of Training approved by the Council of Dental Education includes courses in basic sciences, developmental psychology, and dental and medical courses in various aspects of pedodontics and care for the handicapped patient.

During the two years, there is emphasis on clinical practice, utilizing behavior modification and training in analgesia, I.V. sedation, and operating room procedures. Clinical aspects of pedodontics are stressed in conjunction with preventive dentistry concepts and growth development of the child. An integral part of the program is a literature review of classical pedodontic readings and case presentations. Orthodontic techniques are stressed. The entire course is designed to facilitate taking the Specialty Board of the American Board of Pedodontics. The student conducts an investigation of a pedodontic nature and it is presented in the form of a thesis. Undergraduate teaching rotation is required in the second year.

A United Cerebral Palsy Clinical Fellowship is available during the second year of this program to students who demonstrate superior ability. The fellowship carries an annual stipend and is sponsored by the United Cerebral Palsy Research & Education Foundation, Inc.

Descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn Term

- D9600 Pedodontic theory: technique and practice
- D9602 Clinical practice in pedodontics
- D9606 Anesthesiology and operating room protocol (rotation)
- D9610 Care of the neurologically handicapped child at Blythedale Children's Hospital (rotation)
- D9614 Satellite clinic at Human Resources (rotation)
- D9620 Preventive and interceptive orthodontic clinic
- D9624 Clinic for the handicapped child
- D9631 Thesis
- D9636 Pedodontic guest lecture seminar series
- D9640 Orthodontic technique laboratory
- D9643 Review of literature for the Academy of Pedodontic Boards

- D9650 Undergraduate pedodontic instruction preceptorship (rotation)
- D9655 Satellite clinic at the Institute for the Blind (rotation)
- D9657 Manhattan Development Center (rotation)
- D9900 Research methodology
- D9904 Craniofacial anomalies
- D9905 Oral medicine and clinical oral pathology
- D9911 Functional anatomy of the head and neck
- D9913 Radiology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationships with dentistry
- D9920 Histology and embryology
- D9921 Statistics
- D9956 Introduction to orthodontics
- D9957 Cephalometrics: growth and development

Spring Term

D9601, D9603, D9607, D9611, D9615, D9621, D9625, D9632, D9637, D9644, D9651, D9656, D9658, and D9906 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9652 Dental materials
- D9901 Cariology
- D9902 Pediatrics related to dentistry
- D9908 Clinical stomatology conferences
- D9914 Theory and practice of periodontics
- D9923 Pharmacotherapeutics

Second Year

Autumn Term

- D9604 Clinical practice in pedodontics
- D9608 General anesthesia technique at Roosevelt and Columbia (rotation)
- D9612 Nitrous-oxide oxygen psychosedation at Blythedale (rotation)
- D9616 Satellite clinic at Human Resources (rotation)
- D9618 Satellite clinic at the Institute for the Blind (rotation)
- D9622 Orthodontics for the handicapped patient (rotation)
- D9626 Clinic for the handicapped child
- D9628 Preventive and interceptive orthodontic clinic
- D9630 Intravenous psychosedation clinic (rotation)
- D9633 Thesis
- D9635 Methodology in preventive dentistry
- D9638 Pedodontic guest lecture seminar series
- D9645 Review of literature for the Academy of Pedodontic Boards
- D9653 Undergraduate pedodontic instruction preceptorship (rotation)
- D9659 Manhattan Development Center (rotation)

Spring Term

D9605, D9609, D9613, D9617, D9619, D9623, D9627, D9629, D9634, D9639, D9646, D9654, and D9660 are offered in the spring term. They are a continuation of courses offered in the autumn term.

- D9642 Child developmental psychology
- D9647 Neurological conditions
- D9649 Anesthesiology and related pharmacotherapeutic measures
- D9910 Clinical stomatology conferences
- Anesthesiology 201 Clinical clerkship in anesthesiology

Program in Periodontics

The two-year, full-time program in periodontics prepares the dentist for specialized service, either in private practice or in academics. Although it is strongly clinical in emphasis, the program encourages participation in research and affords the interested student the opportunity for more intensive research training. The program consists of courses in the theory and practice of periodontics and in the basic biologic and related medical sciences. Many schools of thought and training programs are represented in the faculty. Thus, a variety of therapeutic approaches to clinical problems is offered. A scientific approach to a problem in an atmosphere of intellectual inquiry is nurtured, and the student is encouraged to apply fundamental biological knowledge and judgment to clinical problems. Students are also given an opportunity to assist in clinical instruction of undergraduate dental students. This program is accredited as meeting the educational requirements for candidacy for the American Board of Periodontology. Full credit is given for all courses the student completes even though he or she does not continue into the second year of advanced study.

Complete descriptions of the following courses are given under *Courses of Instruction*, below.

First Year

Autumn Term

- D9700 Clinical practice in periodontics
- D9704 Seminars in periodontics and literature review
- D9708 Seminars in periodontics: periodontal therapy
- D9720 Treatment planning in periodontics
- D9724 Minor tooth movement in periodontics
- D9727 Histology and histopathology of periodontal structures
- D9900 Research methodology
- D9905 Oral medicine and clinical oral pathology
- D9911 Functional anatomy of the head and neck
- D9912 Anatomy of the head and neck
- D9913 Radiology
- D9915 Psychiatry and psychosomatic medicine, and their interrelationships with dentistry
- D9916 Temporomandibular joint disorders
- D9920 Histology and embryology
- D9921 Statistics
- D9922 Physiology
- D9951 Periodontal wound healing seminars
- D9962 Seminars in periodontics: plaque, calculus, microbiology, and immunology
- D9964 Continuation of D9962
- D9965 Microbiology and immunology

Spring Term

D9701, D9705, D9709, D9721, D9728, and D9952 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9713 Periodontal surgical conference
- D9726 Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics
- D9901 Cariology
- D9908 Clinical stomatology conferences
- D9923 Pharmacotherapeutics

Second Year

Autumn Term

D9702, D9710, D9714, D9722, and D9953 are offered in the second year. They are continuations of courses offered in the first year.

- D9716 Seminars in periodontics: journal club
- D9718 Seminars in periodontics: the social science and cultural background of health care, dentistry, and periodontics
- D9729 Restorative dentistry related to periodontics

Spring Term

D9703, D9711, D9717, D9719, D9723, D9730, and D9954 are offered in the spring term. They are continuations of courses offered in the autumn term.

- D9731 Practice management in periodontics
- D9910 Clinical stomatology conferences
- D9923 Pharmacotherapeutics
- Anesthesiology 201 Clinical clerkship in anesthesiology





Courses of Instruction

In the following course listings where the name of the subject or area of studies does not appear before the course number it is understood to be the same as the heading preceding each group of courses.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

Dental Science (Core Courses)

^AD9900x. Research methodology

Professor Fine and staff.

A general consideration of the philosophy and methodology of basic and applied research, including a discussion of the art of scientific investigation, the laws and ethics of human experimentation, potential areas of research in the basic sciences and clinical dentistry, the use of the library, the role of statistics, techniques of clinical research, writing for the scientific literature, animal care, and funding of projects. *One two-hour lecture a week.*

^AD9901y. Cariology

Professor I. Mandel.

Lectures in the etiology and histopathology of dental caries, including recent advances in caries prophylaxis. *Seven lecture hours.*

D9902y. Pediatrics related to dentistry

The Department of Pediatrics staff.

A synopsis of pediatrics. Certain peculiarities of growing children of significance in dentistry. The basic concepts and practical aspects of psychological care of children. *One two-hour and one one-hour demonstration a week.*

^AD9903y. Orofacial growth and development

The staff.

Lectures on childhood and adolescent growth: development of the dentition; hereditary and environmental influences on growth; craniofacial malformations; and prediction of facial growth. *Sixteen lecture hours.*

D9904x. Craniofacial anomalies

The staff.

Discussion of various craniofacial anomalies, with emphasis on etiology, morphology, development, and clinical management. *Eight seminar hours.*

^AD9905x. Oral medicine and clinical oral pathology

Professor D. J. Zegarelli and staff.

A comprehensive description and discussion of the diseases of the mouth, jaws, and related structures. Emphasis is on clinical, radiographic, and histologic differential diagnosis. *One two-hour lecture a week for sixteen weeks.*

D9908y, D9910y. Clinical stomatology conferences

Professors D. J. Zegarelli and E. V. Zegarelli, and staff.

The presentation of case histories having interesting and diagnostically challenging diseases of the mouth and jaws. The diagnosis and treatment of each case are discussed by and with the audience, the latter including undergraduate dental students, dental hygiene students, postgraduate students, residents, practitioners, and faculty. *Weekly one-hour conferences.*

^AD9911x. Functional anatomy of the head and neck
Professor Moss.

A concise review of the functional interrelations and their dynamic significance. Pertinent clinical topics are analyzed from this viewpoint. *One two-hour session a week.*

D9912x. Anatomy of the head and neck
Department of Anatomy staff.

Lectures and dissection. *Three hours a week for sixteen weeks.*

D9913x. Radiology
Professor Moss-Salentijn and Mr. Misiak.

The principles of dental x-ray technique, with emphasis on lateral, anteroposterior, sinus, and temporomandibular joint techniques. *Eight two-hour lectures and two three-hour clinical sessions.*

D9914y. Theory and practice of periodontics
Professor Gottsegen.

Four one-hour lectures.

^AD9915x. Psychiatry and psychosomatic medicine, and their interrelationships with dentistry
Professor Lefer

Basic concepts of psychodynamics, psychopathology, and psychosomatic medicine presented with clinical material showing their synthesis with dentistry. *Eleven two-hour lectures.*

D9916x. Temporomandibular joint disorders
Professor Marbach and staff.

Lectures, discussions, and demonstrations on the diagnosis and treatment of temporomandibular joint disorders. Includes a study of the clinical physiology and pathology of facial pain, and the relationship between systemic diseases and facial pain syndromes. *Ten one-hour lectures plus demonstrations.*

D9917x-D9918y. Temporomandibular joint dysfunction and myofascial pain dysfunction problems
Professor Marbach and staff.

A review of skeletal mechanics of the temporomandibular joint and masticatory musculature in its relations to the head and shoulder girdle. The diagnosis of temporomandibular joint pain in terms of muscle spasm and aberration from normal occlusion. *One one-hour lecture or seminar and one three-hour clinical session a week.*

D9919y. Genetics
The staff.

Lectures and demonstrations on principles of genetics. *Six hours.*

D9920x. Histology and embryology
Professor Moss-Salentijn.

Growth and development of the jaws and face, and microscopic anatomy of the teeth and surrounding and related tissues of the oral cavity. Application to clinical dentistry. *One one-hour lecture a week for four weeks, followed by one two-hour seminar a week for ten weeks.*

D9921x. Statistics
The staff.

A review of fundamental principles in statistics, with emphasis on the interpretation of dental statistics. Some attention to current concepts of caries etiology and control. *Nine one-hour lectures.*

D9922x. Physiology**Professor Di Salvo and staff.**

A review of physiological principles underlying certain oral functions, with special emphasis on sensory, motor, and secretory activity. *Fifteen one-hour lectures.*

D9923y. Pharmacotherapeutics**Professor Kahn.**

Lectures on the application of pharmacologic principles of therapeutics in dental practice. *Eleven one-hour lectures.*

Anesthesiology 201. Clinical clerkship in anesthesiology**Dr. Bendixen and staff at the Presbyterian Hospital.**

A clerkship that provides training in preanesthetic evaluation, management, and postanesthetic care of surgical patients. At the conclusion of the clerkship students should be able to do the following: (1) describe the major factors to be considered in selecting anesthetic drugs and techniques for patients undergoing common surgical procedures; (2) describe indications for positive pressure ventilation of the lungs and how the adequacy of such ventilation can be determined; (3) differentiate between a patent and obstructed airway in a patient and demonstrate on a patient or mannikin his/her ability to obtain a patent airway by positioning; (4) describe the indications for use of an endotracheal tube; (5) describe procedures used for resuscitation of a patient who has had cardiac arrest and demonstrate on a mannikin his/her ability to perform mouth-to-mouth ventilation and closed chest cardiac massage; (6) describe indications for and contraindications to the use of local anesthetics to provide infiltration and nerve block anesthesia; and (7) describe the causes, prevention, diagnosis, and treatment of local anesthetic drug toxicity.

Dental Science (Interdepartmental Courses)**D9951x-D9952y, D9953x-D9954y. Periodontal wound healing seminars****Professor Morris.**

The basic principles of wound healing are applied to the special problems of repair presented to dental and periodontal structures. These tissues are studied as they react to the various methods of therapy. *One one-hour seminar a week.*

D9955y. Speech pathology and therapy**Professors Mysak and Guarino.**

Language and speech development in children, and speech pathology and therapy in the patient with oral impairment. *Three two-hour lectures.*

D9956x. Introduction to orthodontics**Professor Nahoum and staff.**

Consists of a series of lectures which survey the entire field of orthodontics. Provides the student with background information that is required in order to begin treating patients and prepares the student for a more detailed study of laboratory and clinical procedures. *Thirty lecture hours.*

D9957x. Cephalometrics: growth and development**Professor Nahoum.**

A survey of growth and development of the dentition and face, including the theory and practice of taking standardized head roentgenograms utilizing a cephalostat, laboratory procedure in the methods of making tracings, and the clinical evaluation of headfilms. *Ten one-hour lectures and four three-hour laboratory sessions.*

D9958x-D9959y. Orthodontic diagnosis and treatment planning**Professor Di Salvo and staff.**

One one-hour seminar a week.



D9961y. Maxillofacial follow-up clinic
Professor Cosman.

Ten two-hour sessions.

D9962x-D9964y. Seminars in periodontics: plaque, calculus, microbiology, and immunology
Professors Oshrain and Fine, and staff.

Intensive and critical review of the literature relating to formation, structure, chemistry, and bacteriology of plaque and calculus; the nature of salivary and crevicular fluids; leading to and covering the microbiology and immunology of periodontal disease. *One-and-one half hours a week for twenty weeks. D9964y runs until March.*

D9965x. Microbiology and immunology
Professors Naidorf, Kamen, and Fine.

Principles of bacteriology and immunology, with particular reference to applications in aseptic procedures and the control of infection in endodontics and periodontics; the relationships between the immune and inflammatory responses are stressed with particular references to clinical endodontics and periodontics. *Lectures: thirty-two hours.*

Endodontics

D9200x-D9201y, D9202x-D9203y. Theory and practice of endodontics
Professors Leavitt, Naidorf, and Ambinder.

Lectures and seminars on past and current theory in endodontics and its relation to modern endodontic practice. Guest lecturers will speak on current research developments in the field of endodontics or related disciplines. *Ninety hours.*

D9204x. Anatomy and technic of endodontics
Professor Moreinis and staff.

Lectures and laboratory sessions on the anatomy of roots, pulp chambers, and root canals. Lectures and demonstrations on endodontic armamentarium and materials. Lectures, demonstrations, and technic sessions on the chemomechanical preparation and filling of canals of extracted teeth. *Forty-five hours.*

D9205x-D9206y, D9207x-D9208y, D9209z. Clinical practice in endodontics**The staff.**

Supervised clinical experience in all phases of operative endodontics. During the second year, instruction and experience teaching undergraduate clinical endodontics is included. *Average of 140 hours a term.*

D9210x-D9211y, D9212x-D9213y. Review of endodontic literature**Professors Ambinder, Lund, Leavitt, and Naidorf.**

Intensive discussion of past and current literature in endodontic and related fields. Reports by students on reading assignments. *One hundred ninety hours.*

D9214y. Pain seminars**Professor Fried.**

All aspects of pain are discussed from the endodontic viewpoint.

D9215y. Endodontic-periodontic relationships**Professor Leavitt.**

The theory and treatment of combined endodontic-periodontic problems. *Ten seminar hours.*

D9216y. Pulp biology**Professors Fine, Kim, Lund, Moss-Salentijn, and Naidorf.**

Normal and pathological pulps. Biological background for pulpal injury, inflammation, and repair. *Sixteen two-hour sessions and demonstrations.*

D9217x-D9218y, D9219x-D9220y. Surgical endodontics**Professor Rothenberg and staff.**

Lectures, demonstrations, and clinical experience in problems requiring combined endodontic and surgical treatment. *Lecture: thirty hours. Clinic: eight hours.*

D9221x-D9222y. Thesis**Professor Naidorf.**

The student conducts an investigation dealing with a subject of the student's choice and approved by the program director concerned. The results of the investigation must be presented in the form of a thesis which should be completed one month before the end of the final term.

D9227x-D9228y, D9229x-D9230y. Guest lecture series

Prominent clinicians and researchers are invited to lecture or conduct seminars in the areas of late advances in endodontics theory, practice, or research.

Orthodontics

D9500x. Orthodontic technic**Professor Di Salvo and staff.**

Intensive technical instruction and lectures in the assembling and manipulation on typodonts of removable, labiolingual, edgewise, extraoral forces, twinwire and Begg appliances, retainers, and bite plates. *Six three-hour sessions a week for eleven weeks.*

D9501x-D9502y and D9503z. Clinical orthodontic practice**Professor Di Salvo and staff.**

Supervised clinical practice in the use of removable, edgewise, extraoral, and Begg appliances. *Six three-hour sessions a week.*

D9504x-D9505y and D9506z. Clinical orthodontic practice**Professor Di Salvo and staff.**

A continuation of *D9501-D9502* and *D9503*.

D9507x. Biomechanics

Professor Blechman.

Seven two-hour lectures.

D9508y. Practice management in orthodontics

Dr. Ruderman.

Lectures on the administration of orthodontic practice. Five two-hour lectures.

D9509x-D9510y. Orthodontic diagnosis and treatment planning

Professor Di Salvo and staff.

One one-hour seminar a week.

D9511x. Dental anthropology and evolution

Professor Oppenheimer.

Four two-hour lectures.

D9513y. Public health aspects of orthodontics

Professor Huettner.

Four two-hour lectures.

D9514y. Oral and maxillofacial surgery related to orthodontics

Professor Roser and staff.

Practical considerations of unerupted teeth, extreme prognathism, intermaxillary wiring, and cleft-palate cases. Four two-hour lectures.

D9515x-D9516y. Orthodontic literature review

Professor Nahoum.

One two-hour seminar a week.

D9517x-D9518y. Orthodontic literature review

Professor Cangialosi.

One two-hour seminar a week.

D9519x. Dental materials

Professor Rosenblum.

Lectures and laboratory on the physical and chemical properties of the metals and other materials used in orthodontics and pedodontics, with clinical applications. Four one-hour lectures.

D9520y. The cleft-palate patient

Professor Isaacson and staff.

Lectures on the various problems in the treatment of the cleft-palate by the orthodontist. Coordination with related specialties is emphasized. Six two-hour lectures.

D9521x-D9522y. Theory and practice of orthodontics

Professor Di Salvo and staff.

Lectures, discussions, and demonstrations, in which theory is correlated with clinical observation and practice. Three one-hour lectures a week.

D9523x-D9524y. Theory and practice of orthodontics

Professor Di Salvo and staff.

A continuation of D9521-D9522. One one-hour lecture a week.

D9525y-D9526z, D9527x-D9528y, D9529z. Thesis

Professor Di Salvo and staff.

The student conducts an investigation dealing with a subject of the student's choice and approved by the program director. The results of the investigation must be presented in the form of a written thesis which should be completed one month before the end of the final term.

Pedodontics

D9600x-D9601y. Pedodontic theory: technique and practice

Professor Davis.

Conferences and visual education on basic concepts of operative procedures, pulp therapy, and space maintenance.

D9602x-D9603y, D9604x-D9605y. Clinical practice in pedodontics

Professors Davis and Metcalf.

Supervised clinical practice in all phases of pedodontics and related disciplines.

D9606x-D9607y, D9608x-D9609y. Anesthesiology and operating room protocol (rotation)

Professor Hackmyer.

A rotation in the Anesthesiology Department of Presbyterian Hospital and didactic material on operating room techniques. Includes actual cases performed in the operating room.

D9610x-D9611y, D9612x-D9613y. Care of the neurologically handicapped child at Blythedale Children's Hospital (rotation)

Professors Davis and George.

The clinical management of the neurologically handicapped child is stressed, including special techniques for the sedative management of difficult patients.

D9614x-D9615y, D9616x-D9617y. Satellite clinic at Human Resources (rotation)

Professor King.

Dental procedures for the handicapped pedodontic patient.

D9618x-D9619y. Satellite clinic at the Institute for the Blind (rotation)

Professors Cohen and Hammer.

Dental procedures for the pedodontic patient with blindness and other handicapping conditions.

D9620x-D9621y. Preventive and interceptive orthodontic clinic

Professors Dimond and Koweek.

Theory and application of preventive interceptive orthodontic techniques for the pedodontic and adolescent patient. Includes cephalometric and related diagnostic evaluation.

D9622x-D9623y. Orthodontics for the handicapped patient (rotation)

Professor Koster.

Orthodontic practice for the handicapped child and adult.

D9624x-D9625y, D9626x-D9627y. Clinic for the handicapped child

Professor Metcalf.

Clinical experiences with the handicapped child emphasizing comprehensive treatment planning and behavior management.

D9628x-D9629y. Preventive and interceptive orthodontic clinic

A continuation of *D9620-D9621*.

D9630x. Psychosedation and behavior management in pedodontics

Professors George and Davis.

Management approaches to the difficult patient are presented and include per oral premedication, nitrous oxide sedation, intramuscular and intravenous sedation. The didactic component is presented in seminars and with patients.

D9631x-D9632y, D9633x-D9634y. Thesis

Professor Davis.

The graduate student conducts an investigation of an approved area of interest in the field of pedodontics.

D9635x. Methodology in preventive dentistry

Professor I. Mandel.

Under the direction of the Department of Preventive Dentistry, seminars and projects pertinent to the prevention of dental pathology are conducted.

D9636x-D9637y, D9638x-D9639y. Pedodontic guest lecture seminar series

Professor Davis.

Prominent individuals in the field of pedodontics present two-hour seminars on various contemporary topics.

D9640x. Orthodontic technique laboratory

Staff.

A laboratory course designed to instruct the student in the principles of design and construction of various orthodontic appliances.

D9641y. Nutrition

The staff of the Institute of Human Nutrition.

Study of human nutrition with emphasis on the requirements of normal growth and development and on the prevention of oral pathology.

D9642y. Child developmental psychology

Professor Davis.

A literature review and seminar series designed to prepare the pedodontist to understand and implement the various techniques of behavior management.

D9643x-D9644y, D9645x-D9646y. Review of the literature in pedodontics

Professors Davis and Cohen.

A seminar review of the classical and current literature in pedodontics.

D9647y. Neurological conditions

Professor Metcalf.

An overview of the human nervous system and pathologies with references to clinical expectations and management.

D9649y. Anesthesiology and related pharmacotherapeutic measures

Professor Jaffe.

Theoretical background for the use of pharmacotherapeutic adjuncts to therapy.

D9650x-D9651y, D9653x-D9654y. Undergraduate pedodontic instruction preceptorship (rotation)

Professor Davis.

Instruction by graduate students of the undergraduate student in clinical pedodontics.

D9652y. Dental materials

Professor Davis.

Theoretical aspects of the selection and use of the various restorative materials in pedodontics.

D9655x-D9656y. Satellite clinic at the Institute for the Blind (rotation)

A continuation of *D9618-D9619*.

D9657x-D9658y, D9659x-D9660y. Manhattan Development Center (rotation)

Anesthesiology 201. Clinical clerkship in anesthesiology

For description, see under Dental Science (Core Courses).

Periodontics

D9700x-D9701y, D9702x-D9703y. Clinical practice in periodontics

Professor Gottsegen and staff.

Clinical experience in diagnosis, treatment planning, and all the phases of periodontal therapy. Exposure to a wide variety of surgical procedures, various occlusal concepts, simple orthodontic procedures, temporary stabilization methods, and grounding in patient management. Emphasis on motivating the patient to practice oral hygiene. *Five clinic sessions a week in the first year and six a week in the second year.*

D9720x-D9721y, D9722x-D9723y. Treatment planning in periodontics

Professors Johnson, Wasserman, and Geiger.

D9724x. Minor tooth movement in periodontics

Professor Vilardi.

The selection of cases and technic for performing minor tooth movements. *One hour of lecture a week.*

D9726y. Occlusion, function of the jaws and temporomandibular joint, with special reference to periodontics

Professors Tannenbaum and Vilardi.

One one-and-one-half hour lecture and one seminar a week for one semester.



D9727x-D9728y. Histology and histopathology of periodontal structures
Professor Moskow.

Study of microscopic aspects of periodontium in health and disease as they relate to clinical findings. Lectures and laboratory including microprojection. *Two hours a week for one year.*

D9729x-D9730y. Restorative dentistry related to periodontics
Professors Lucca, Grayson, Goldin, Scarola, Jutkowitz, and Widrow.

Restorative dentistry significant to periodontal problems. *One one-hour lecture a week for one year.*

D9731y. Practice management in periodontics
Professor Hirschfeld.

One one-hour lecture a week for eleven weeks.

Periodontics Seminars

The following seminars provide the didactic core of periodontics and are organized as several concurrent and consecutive series devoted to different subject areas. This series is a review of the basic and significant periodontic literature having to do with the biology of the periodontal structures, periodontal disease, and periodontal treatment; it concerns itself with the role of periodontics and the surrounding world.

D9704x-D9705y. Seminars in periodontics and literature review
Professors Gottsegen, Abbatiello, and Nisselson, and Dr. T. Connolly.

A comprehensive and intimate familiarity with the literature is developed by the extensive seminar program. In addition the ability to read critically, to evaluate, and to present personal case material is engendered. *One two-hour seminar a week for one year.*

D9708x-D9709y, D9710x-D9711y. Seminars in periodontics: periodontal therapy
Professor Winter and staff.

Review of the literature in periodontal therapy. Students become familiar with the historical development of periodontal therapeutic techniques by exploring the literature, reading the classic articles, and critically analyzing the pertinent research. *One-and-one-half hours a week for one year.*

D9713y, D9714x-D9715y. Periodontal surgical conference
Professors Stein and Silston, and staff.

Seminars in periodontal surgical problems; literature review, critical analysis, and student case presentation. *One one-and-one half hour seminar a week throughout the academic year.*

D9716x-D9717y. Seminars in periodontics: Journal club
Professor Wasserman.

A seminar series based on selected articles from current journals. Critical analysis of the assigned paper requires research and review of pertinent literature. The objective of this course is to develop habits of critical reading of the scientific literature. *One-and-one-half hours a week for one year.*

D9718x-D9719y. Seminars in periodontics: sociocultural and economic aspects of periodontics
Professor Gottsegen and staff.

A series of seminars and discussions in which the historical and ethical background of medicine and dentistry becomes the framework for exploring current socioeconomic issues related to the health professions. This course is based on the belief that the increasing social responsibility demanded of leaders of the health professions requires specialists with a broad cultural understanding and strong ethical values as well as advanced technical skill and scientific knowledge. *One-and-one-half hours a week for one year.*

Fellowship and Postdoctoral Programs in Basic Sciences

In recognition of the need for advanced education in the basic sciences and to qualify graduates in dentistry as teachers and investigators, fellowships are offered for study and research in anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. Fellows are normally enrolled in the Graduate School of Arts and Sciences of the University as prospective candidates for the degree of Doctor of Philosophy.

Appointments are made on a yearly (twelve-month) basis, with opportunity for renewal or extension at the discretion of the chairman of the department in which the student is enrolled. The specific objectives of the program are to furnish more complete preparation for careers in dental education and to offer training in investigation so that research in important unsolved problems indigenous to dental science will be extended. Students may apply also to the United States Public Health Service for financial aid.

The formal instruction is elected from courses offered in the Graduate School of Arts and Sciences, the School of Dental and Oral Surgery, the College of Physicians and Surgeons, and the School of Public Health. Each fellow must formulate and carry out, under supervision, an original investigation. During the period of appointment, fellows are expected to remain in residence and devote their entire time to study and research. In order to maintain contact with clinical dentistry, the student may attend clinics in the School of Dental and Oral Surgery and will be given an opportunity to participate in undergraduate teaching.

Fellowship Application

To apply for a fellowship in the basic sciences for dentists, the applicant should obtain, from the Postdoctoral Admissions Office, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032, an application form which should be completed and returned to the same address. Applicants should also arrange for each college or university they have attended to send two official transcripts of their records to the Postdoctoral Admissions Office. A personal interview with the applicant is required. The applicant must be accepted not only by the School of Dental and Oral Surgery but also by the chairman of the specific basic science department within which he or she wishes to study. Applications may be submitted at any time. Appointments are made as vacancies occur.

Admission to the Graduate School of Arts and Sciences

Upon acceptance to a postdoctoral program the applicant must apply for admission as a regular graduate student in basic sciences in the Graduate School of Arts and Sciences of Columbia University. The admission procedure, and the procedure and dates for registration, including payment of fees, are given in the bulletin of the Graduate School of Arts and Sciences, a copy of which can be secured by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.



The Dental Hygiene Programs

A Career in Dental Hygiene

Admission Procedure

The Baccalaureate Programs

Program A

Program B

The Graduate Program



A Career in Dental Hygiene

As the demand for dental services increases, the spotlight focuses on the dental hygienist, in most states the only licensed dental auxiliary with formal permission to work on the tissues of the oral cavity. The present and future needs, both national and international, far exceed the number of dental hygienists now available and in training. The programs in dental hygiene offer excellent preparation for the countless opportunities available to registered dental hygienists in a variety of settings.

In private practice, the dental hygienist functions as a member of the dental health team, providing preventive and therapeutic clinical services and comprehensive dental health education under the supervision of the dentist.

In compliance with school policies and in cooperation with the supervising dentist, school administrator, and teaching staff, the dental hygienist develops dental health education programs, provides clinical services for school children, and functions as a dental health liaison to the community.

In public health agencies, the dental hygienist augments the services of medical, dental, and social public health workers by planning, instituting, administering, and evaluating dental health programs.

In private industry, the dental hygienist provides preventive and health educational services for company beneficiaries and community groups. Dental hygienists are currently finding new career opportunities as reviewers of third party payment plans for insurance corporations and agencies.

In hospitals, as a member of the total health team, the dental hygienist provides maintenance and preventive services to assist patients in the attainment of maximum oral health. Administrative services are performed by the dental hygienist in the hospital dental clinic setting.

In research, the dental hygienist develops and collaborates in areas of basic and applied research with other health professionals. Research is conducted by the hygienist in clinical, educational, and community settings.

The Peace Corps, missionary service, American industries, and dental hygiene schools abroad provide openings for professionals with a desire to expand their horizons in dental health at the international level.

In dental hygiene education, the graduate hygienist provides clinical and classroom instruction for dental hygiene students in training programs; and dental hygienists with advanced degrees hold administrative positions in dental hygiene programs.

In whatever field dental hygienists choose to serve, they hold positions of increasing responsibility and professional recognition.

Admission Procedure

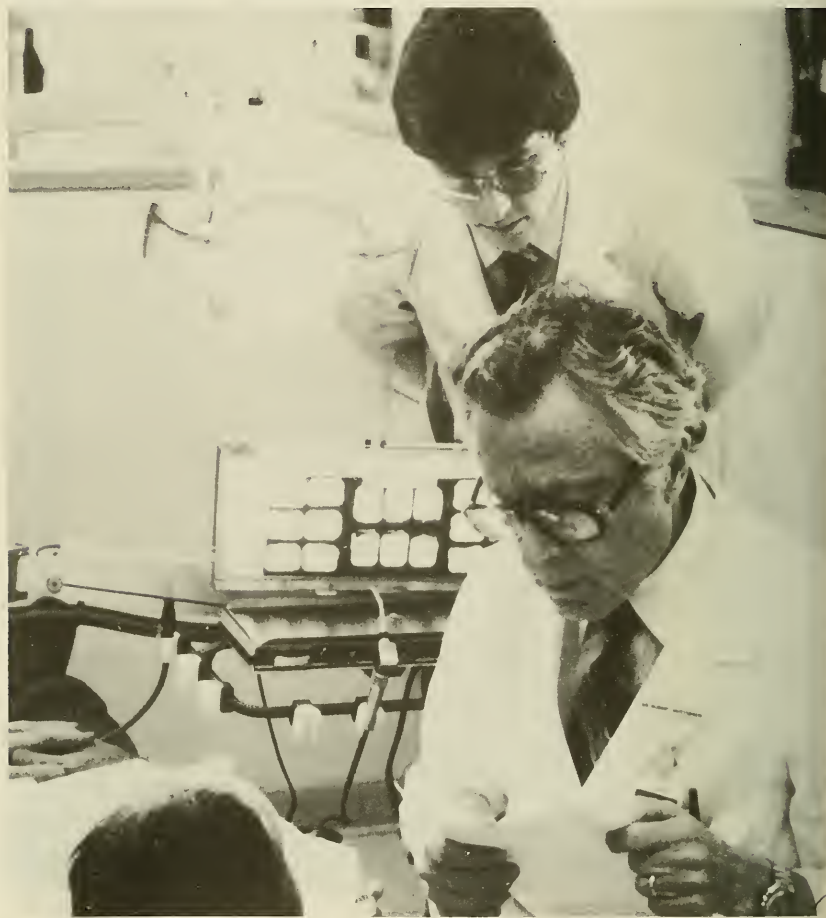
Prospective applicants may use the application form attached to this bulletin to initiate the application process. The completed form should be returned to the Division of Dental Hygiene with the application fee of \$35, made payable to Columbia University. This fee cannot be returned and is not credited toward tuition. Candidates for the B.S. degree (Program A) are admitted only in September. Candidates for the B.S. degree (Program B), and for the M.S. degree, and applicants who are not degree candidates are admitted in September, January, or July.

Acceptance Fee

Within two weeks after applicants have been informed of their acceptance, they must notify the Director that they intend to become degree candidates. A check or money order for \$200, payable to Columbia University, must accompany the applicant's acceptance. If the applicant registers at the next enrollment, the amount of the acceptance fee will be deducted from the tuition for that term. If the applicant does not register, the acceptance fee will not be returned.

Admission to Individual Courses

Students who do not wish to become degree candidates may be granted permission to attend a course or courses to a maximum of twelve points if they meet the standards of scholarship and attendance required of degree candidates.



Program A

The educational program of the dental hygienist at Columbia has a long and distinguished record. In 1916, the New York School of Dental Hygiene became affiliated with the School of Dental and Oral Surgery, providing the first dental hygiene program to be offered in a university. In 1947, because of the many advances within the profession and general broadening of educational programs, Columbia eliminated the one-year technical program in favor of the professional bachelor's degree (Program A). It is, at this time, one of only twenty-four such programs that offer dental hygiene education at the baccalaureate level, concentrating on the academic preparation of a professional dental hygienist.

Admission Requirements

Applicants must have completed two years or 60 points of credit in approved colleges or universities, including one course in each of the following subjects: English composition, speech, sociology, psychology; 4 points of general chemistry with laboratory; and 4 points of biology with laboratory. Additional courses in chemistry and biology are recommended.

Application for admission is evaluated on the basis of the following materials submitted by candidates:

1. The application form
2. Official transcripts from each college attended
3. Two letters of recommendation from college faculty
4. One personal letter of recommendation
5. A personal statement of interest and career objectives

Applicants whose credentials are acceptable for admission will receive an invitation for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may, at the discretion of the Admissions Committee, be interviewed by members of the alumni in their respective localities.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points, 67 points of which are required courses, indicated by the letter ^R preceding the course number. The remaining points, including the English requirement as determined by the English Placement Test, may be selected from courses offered at the School of General Studies or in other University divisions.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

- ^RD3017x. Microbiology** **2 pts**
Morphology and physiology of microorganisms. The role of microorganisms in health and disease with emphasis on the microorganisms associated with the oral cavity.
- ^RD3033x. Biochemistry** **2 pts**
The chemical reactions of the components of the living cell; proteins, carbohydrates, lipids, nucleic acids, vitamins, and hormones.
- ^RD3040x. Human anatomy and physiology** **6 pts**
A correlated survey of human anatomy and physiology with special emphasis on topics of special interest to oral health care. Lecture and laboratory with human materials.
- ^RD3067y. Histology** **3 pts**
A basic course in general and oral histology and oral embryology. Special emphasis is placed on the microscopic anatomy of the hard and soft tissues of the oral cavity; use of the microscope in laboratory sessions.
- ^RD3100x. Oral anatomy** **3 pts**
The anatomy and physiology of the structures of the oral cavity. Emphasis is placed on tooth development and morphology of the permanent and deciduous dentition. Through lectures, slide projections, and laboratory carving and drawing requirements, the students are prepared to meet course objectives and to experience a solid foundation for dental hygiene education.
- ^RD3113x. Pharmacology** **2 pts**
Orientation to the study of pharmacology as it affects the clinical practice of dental hygiene and dentistry. The particular uses of drugs and antibiotics and the relative value of germicidal agents.
- ^RD3126y. Radiology** **3 pts**
Principles and procedures of oral radiology which relate to diagnostic yield. Topics include radiation, physics and biology, radiographic armamentarium and techniques, radiographic interpretation, and radiation protection. Lectures, demonstrations, and practice.
- ^RD3138x. Myofunctional therapy** **2 pts**
Etiology and symptomatology of oral habits affecting occlusion, mastication, deglutition, facial expression, and speech. Cephalometric roentgenography and photography used in the study of facial growth and dental and facial relationships. Methods and techniques for correcting poor oral habits.
- ^RD3139y. Myofunctional therapy clinic** **1 pt**
Clinical practice in habit retraining, including interviewing, examination, data collection and interpretation, and therapy techniques.
- ^RD3153y. Oral pathology and medicine** **3 pts**
Lecture and slide presentation of the more common and pertinent diseases of the hard and soft tissues of the mouth. Topics include the important aspects of overall medical problems and their implications for dental hygiene practice.
- ^RD3163y. Periodontics, I** **2 pts**
An introduction to the histological and clinical presentation of the periodontium in health and disease. Techniques for evaluating periodontal status and identifying etiologic agents causing alterations in these tissues enable the student to apply preventive and therapeutic measures in the clinical situation.
- ^RD3164x. Periodontics, II** **2 pts**
An in-depth examination of historical and current periodontal therapy and theory. Familiarity with appropriate periodontal treatment modalities; their biological rationale; and the hygienist's significant role in prevention, maintenance, and therapy is stressed.

- R D3175x. Local anesthesia** **1 pt**
Lectures and clinical sessions on basic and current concepts of the administration of local anesthesia.
- R D3200y. Methods in oral health education** **2 pts**
A study of the development of behavioral skills in motivating and communicating dental health education to the patient.
- R D3234y. Critique of dental literature** **2 pts**
Introduction to the critical examination of dental literature. Evaluation of scientific writing and research methodology is related to the needs of the dental hygienist.
- R D3268x. Introduction to methods of research** **2 pts**
Introduction to the philosophy, principles, and methods of scientific inquiry. Topics include research planning, techniques of making observations, and analysis and presentation of findings.
- R D3350x. Social dental hygiene, I** **2 pts**
Basic orientation to principles of public health. An ecological approach to sociocommunity health designed through seminar sessions, class discussions, assigned reading to sensitize the student to the dental needs of the community.
- R D3351y. Social dental hygiene, II** **3 pts**
Through field assignments in selected social settings, the student participates in community health care planning and becomes acquainted with patterns for the delivery of comprehensive health care services and the role of the dental team in these patterns. Students spend one full day per week in a setting where they initiate and carry out a simple research project.
- R D3400x. Preventive oral health services, I: Lecture** **2 pts**
An introduction to basic concepts and principles of preventive oral health services the dental hygienist may render to the public.
- R D3401x. Preventive oral health services, I: Clinic** **2 pts**
Students spend nine hours each week in a clinical practice setting with lab partners and patients.
- R D3402y. Preventive oral health services, II: Lecture** **2 pts**
Continuation, expansion, and reinforcement of the preventive oral health services performed by the dental hygienist through clinical application of correlated lecture material. Emphasis on developing professional conduct and judgment, technical accuracy, and interpersonal relations.
- R D3403y. Preventive oral health services, II: Clinic** **2 pts**
Students spend nine hours each week in a clinical setting that provides direct services to the public.
- R D3404x. Preventive oral health services, III: Lecture** **2 pts**
Designed to familiarize the dental hygiene student with different dental materials available and utilized in dental practice.
- R D3405x. Preventive oral health services, III: Laboratory** **1 pt**
Laboratory experience provides a basis for understanding the procedures involved in using restorative and other dental materials, especially as they relate to expanded services performed by the dental hygienist.
- R D3406x. Preventive oral health services, III: Clinic** **2 pts**
Students spend fifteen hours each week providing direct patient services.
- R D3407y. Preventive oral health services, IV: Lecture** **2 pts**
Designed to develop awareness in the dental hygiene student of total patient care within the different dental specialties. Additional preventive services are emphasized in order to function more effectively in the dental practice setting.

- ^RD3408y. Preventive oral health services, IV: Clinic** **2 pts**
Students spend fifteen hours each week providing direct patient services.
- ^RD3420x. Professionalism, I** **1 pt**
The history of dental hygiene and the American Dental Hygienists' Association, its structure and function, with particular emphasis on the principles and utilization of parliamentary procedures.
- ^RD3421y. Professionalism, II** **1 pt**
Independent study in the field of table clinic design and presentation. Under guidance of faculty adviser, students develop a table clinic for presentation at scientific sessions of local, state, and national meetings of professional organizations.
- ^RD3422x. Professionalism, III** **1 pt**
Career rights and legislation affecting dental hygiene practice.
- ^RD3423y. Professionalism, IV** **1 pt**
Résumé and interview techniques; application of legislation affecting oral health and careers of dental hygienists; scope of dental hygiene fields for employment; budgeting and personal management; issues relevant to professional life.
- ^RD3546y. Oral health teaching** **2 pts**
Designed to increase the student's ability to create, select, and utilize appropriate methods and materials in oral health education for elementary and secondary school programs. Students provide a minimum of eight one-hour units of instruction for various grade levels in area schools.
- ^RNutrition M3230x. Nutrition in health and disease** **2 pts**
An introductory course in nutrition presented through the Institute of Human Nutrition.



Program B

In 1963 Columbia initiated a postcertificate program designed to provide advanced dental hygiene and liberal arts education for transfer students from basic dental hygiene education programs. Program B leads to a bachelor's degree and is at present one of only twenty-seven programs of this type. This program provides the student with advanced and extended clinical skills and a broadened background in the liberal arts, allowing the graduate to practice dental hygiene in a variety of settings.

Admission Requirements

Applicants must have completed two years of dental hygiene education at an accredited dental hygiene program and must be licensed to practice dental hygiene. Proof of licensure must be submitted prior to registration for classes.

Application for admission is evaluated on the basis of the following materials submitted by candidates:

1. The application form.
2. An official transcript from each college attended
3. Two letters of recommendation from college faculty
4. One personal letter of recommendation
5. A personal statement of interest and career objectives

Applicants whose credentials are acceptable for admission will receive an invitation for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the alumni in their respective localities at the discretion of the Admissions Committee.

Applicants from foreign countries are required to take the TOEFL examination (Test of English as a Foreign Language) in order to establish language competency; applicants must also show transcript evidence of having completed a curriculum comparable to a basic two-year curriculum that meets minimal guidelines as specified by the Council on Dental Education.

Requirements for the B.S. Degree in Dental Hygiene

Students must complete 70 points, including the English composition requirement as determined by their scores on the English Placement Examination, 6 points of literature, 3 points of anthropology, and 3 points of fine arts. At least 35 of the required 70 points must be taken at the School of Dental and Oral Surgery; of these 35 points, 21 are required courses, indicated by the letter ^R preceding the course number. The remaining 35 points may be taken in a chosen area of elective concentration and selected from courses offered at the School of Dental and Oral Surgery or in other divisions of the University.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change instructors as may be necessary.

D3138x. Myofunctional therapy **2 pts**

Etiology and symptomatology of oral habits affecting occlusion, mastication, deglutition, facial expression, and speech. Cephalometric roentgenography and photography used in the study of facial growth and dental and facial relationships. Methods and techniques for correcting poor oral habits.

D3139y. Myofunctional therapy clinic **1 pt**

Clinical practice in habit retraining, including interviewing, examination, data collection and interpretation, and therapy techniques.

^RD3164x. Periodontics, II **2 pts**

An in-depth examination of historical and current periodontal therapy and theory. Familiarity with appropriate periodontal treatment modalities; their biological rationale; and the hygienist's significant role in prevention, maintenance, and therapy is stressed.

D3175x. Local anesthesia **1 pt**

Lectures and clinical sessions on basic and current concepts of the administration of local anesthesia.

D3187x and y. Dental specialties **1, 2, or 3 pts**

Students rotate through clinical specialties of various divisions of the School of Dental and Oral Surgery.

D3188x and y. Dental specialties **1, 2, or 3 pts**

Students rotate through clinical specialties of various divisions of the School of Dental and Oral Surgery.

D3190x and y. Independent study **1, 2, or 3 pts**

Registration only by permission of the instructor under whose guidance work is undertaken. Proposals must have prior approval of a faculty member. Students must plan to spend three hours per week for every point of independent study credit.

D3191x or y. Independent study **1, 2, or 3 pts**

As stated under *D3190*.

^RD3234y. Critique of dental literature **2 pts**

Introduction to the critical examination of dental literature. Evaluation of scientific writing and research methodology is related to the needs of the dental hygienist.

^RD3268x. Introduction to methods of research **2 pts**

Introduction to the philosophy, principles, and methods of scientific inquiry. Topics include research planning, techniques of making observations, and analysis and presentation of findings.

^RD3350x. Social dental hygiene, I **2 pts**

Basic orientation to principles of public health. An ecological approach to sociocommunity health designed through seminar sessions, class discussions, and assigned reading to sensitize the student to the dental needs of the community.

^RD3351y. Social dental hygiene, II **3 pts**

Through field assignments in selected social settings, the students participate in community health care planning and become acquainted with patterns for the delivery of comprehensive health care services and the role of the dental team in these patterns. Students spend one full day per week in a setting where they initiate and carry out a simple research project.

D3352x. Hospital administration **2 pts**

A year course where the autumn term is designed to give the dental hygiene student exposure to

the didactic aspects of hospital administration. An overview of the functions of a hospital is presented including the history, relationship of the hospital to the community, administrative functions, and the integration of dental health services within the hospital setting.

D3353y. Hospital administration

3 pts

Field work in hospital administration. Students spend two full days per week in a hospital setting where they participate in hospital administration and management within a dental facility.

D3420x. Professionalism, I

1 pt

The history of dental hygiene and the American Dental Hygienists' Association, its structure and function, with particular emphasis on the principles and utilization of parliamentary procedures.

D3544x. Dental hygiene teaching theory

3 pts

Basic principles, philosophies, and methods of classroom teaching. Practical experience in developing skills in design, implementation, and evaluation.

D3545y. Dental hygiene teaching practice

3 pts

Field experiences in dental hygiene teaching, including clinical and classroom instruction.

D3546y. Oral health teaching

2 or 3 pts

Designed to increase the student's ability to create, select, and utilize appropriate methods and materials in oral health education for elementary and secondary school programs. Students provide a minimum of eight one-hour units of instruction for various grade levels in area schools.

D3580x. Advanced preventive oral health services, I

2 pts

Designed to expand the knowledge of the dental hygienist in the area of clinical practice with particular attention to the topics of clinical periodontics.

D3581x. Advanced preventive oral health services, I: Clinic 1, 2, or 3 pts

Students are assigned to postgraduate students in the division of periodontics for advanced training.

D3582y. Advanced preventive oral health services, II

3 pts

Lecture, seminar, and laboratory course in expanded functions in restorative dentistry; a two-hour lecture and three-hour laboratory per week.

D3583y. Advanced preventive oral health services, II: Clinic

1 pt

Students spend clinic time in preparation for clinical teaching assignments in the second year; prerequisite course for *D3544-D3545*.

Areas of Concentrated Study

Dental Hygiene Education

Preparation is for first-level clinical teaching in dental hygiene programs, dental health teaching, and/or graduate study in dental hygiene education or allied health. This concentration provides basic knowledge of educational philosophy and psychology, teaching methods and materials, and tests and measurement. More than forty courses are available in various departments of Teachers College and the School of General Studies.

Public Health

Preparation is for positions in public health agencies, dental clinics, and/or graduate study in dental hygiene, public health, health education, or health administration. This concentration provides students with greater understanding of the role and function of

dental hygienists in public health agencies and ways in which they work with health and social agencies in the community. Students are fortunate to have a large number of extramural public health, hospital, medical, and prepayment facilities and organizations in and around New York City for field experiences. A variety of courses are offered at Teachers College and the School of General Studies.

Speech

Preparation is for expanded clinical practice in the areas of speech pathology and myofunctional therapy and/or for graduate study in speech pathology. Students become familiar with major speech disorders related to dentistry and with the methods of preventing oral and facial defects. Courses are offered at Teachers College, the School of General Studies, and the School of Dental and Oral Surgery.

Nutrition

Preparation is for expanded clinical practice in the area of nutritional counseling and/or for graduate study in the field of nutrition education. Attention is given to the development of nutritional programs in various communities, both in this country and abroad. Courses in sciences and related fields are offered at Teachers College and in the School of General Studies.

Liberal Arts

Students who do not wish to concentrate in any of the areas listed above may supplement their dental hygiene courses with liberal arts courses selected according to individual needs and interests. These courses are taken at the School of General Studies and Barnard College.

Predental Education

Students interested in application to dental school should be prepared to fulfill certain course requirements during the summer prior to entrance. After entering the program, the student must follow a rigid course of study which includes the science courses prescribed for entrance to most dental schools.

The Graduate Program

The Master of Science degree program was established in 1953 as the first graduate program in dental hygiene. This program is designed to prepare candidates for positions in dental hygiene education and program administration; community and public health dental hygiene; educational, clinical, or basic research; or graduate study at the doctoral level. At present it is one of only five programs in the country that offers the final degree in dental hygiene.

Admission Requirements

Applicants must have completed a bachelor's degree approved by Columbia University and must be licensed to practice dental hygiene or dentistry. Proof of licensure must be submitted prior to registration for classes.

Application for admission is evaluated on the basis of the following materials submitted by the candidates:

1. The application form
2. Official transcripts from each college attended
3. Two letters of recommendation from college faculty
4. One personal letter of recommendation
5. A personal statement of interest and career objectives

Applicants whose credentials are acceptable for admission will receive an invitation for an interview with the Committee on Admissions for Dental Hygiene. Those who live in areas outside commuting distance of New York City may have an interview with members of the alumni in their respective localities at the discretion of the Admissions Committee.

Applicants from foreign countries are required to take the TOEFL examination (Test of English as a Foreign Language) in order to establish language competency.

Degree Requirements

The Master of Science degree is granted upon the satisfactory completion of 32 points. At least 18 points must be earned in the School of Dental and Oral Surgery, 16 of which are required courses, indicated by the letter ^R preceding the course number. The remaining course work may be completed in other graduate departments of the University.

Courses of Instruction

In the following course listings, *Dental Hygiene* is understood to precede all course numbers unless otherwise indicated.

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors as may be necessary.

^RD6001x. Teaching preventive oral health services: instruction and evaluation 4, 5, or 6 pts

An experiential study of clinical dental hygiene education utilizing the concepts inherent in a basic teaching model: instructional objectives, entering behavior, learning experiences, and evaluation procedures. Emphasis on creating and evaluating learning experiences for students in a preclinical phase of study in a dental hygiene curriculum leading to a baccalaureate degree.

D6002x or y. Administration 2 or 3 pts

An overview of administrative theory and practice with attention to current issues in higher education that have impact on dental hygiene education.

D6003x or y. Curriculum 2 or 3 pts

An overview of higher education as it relates to curriculum issues, organization, and development in the field of dental hygiene at the associate degree and baccalaureate degree levels.

^RD6004x. Methods of research, I 3 pts

Introduction to the philosophy, principles, and methods of scientific inquiry; topics include research planning, techniques of making observations, and analysis and presentation of findings. Opportunity to design research projects in clinical, social, or educational settings.

D6005x and y. Methods of research, II 3 pts

Prerequisite: *Dental Hygiene D6004*

Under direction of the course instructor, students plan and execute a modest research project. Results of the investigation are presented in a thesis completed before the end of the term.

D6006x. Oral diagnosis 2 pts

A comprehensive description of diseases of the mouth, jawbone, and related structures.

D6008y. Scientific writing and reporting 3 pts

Development of techniques for preparation of publishable articles in professional journals and health-related lay publications, emphasizing grammar and style fundamentals through critical review, editing, evaluation, and production of manuscripts.

^RD6009x-D6010y. Experiences in dental hygiene teaching 3 pts each term

Seminar on philosophical questions and practical methods of teaching. Skill development includes design and evaluation of individual presentations that maximize the role of teacher as facilitator of student growth.

^RD6011x. Advanced periodontics: Lecture 2 pts

Comprehensive study of periodontal disease: analysis of the science and techniques of periodontics.

D6012x or y. Advanced periodontics: Clinic 1, 2, or 3 pts

Clinical experiences in scaling and root planing procedures.

D6013x-D6014y and D6013y-D6014x. Basic science foundation for dental hygiene practice 3 pts each term

Study of selected basic science topics under the supervision of the respective basic science instructors. Analysis of the topics as they relate to dental hygiene education.

D6017x and y. Externship in dental hygiene education 4½ or 9 pts

Supervised administrative and teaching experiences in dental hygiene schools that cooperate with the dental hygiene program of the School of Dental and Oral Surgery. Experiences culminate with a written report and workshop presentation at the end of the term.

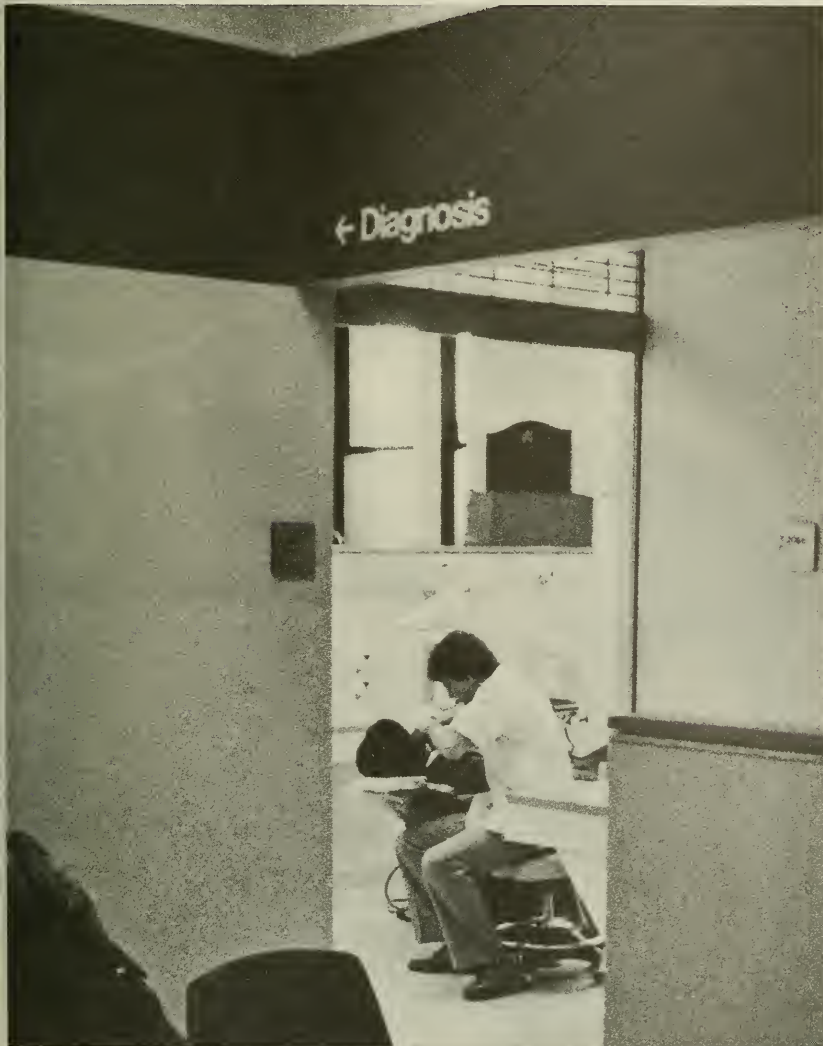
D6018x-D6019y. Myofunctional therapy 2 pts each term

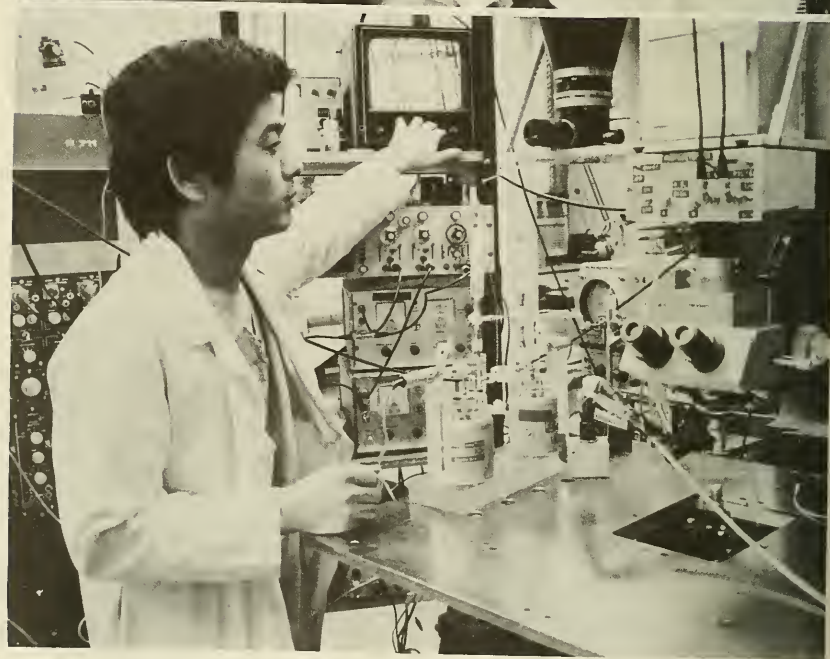
Investigation of the etiology, symptomatology, and treatment of oral habits that may or may not affect occlusion, mastication, deglutition, facial expression, and speech. Students select an area of specific interest and develop a research project.

D6020x and y. Expanded services for the dental hygienist **3 pts**
Lecture and laboratory course in expanded functions in the area of restorative dentistry.

D6021x and y. Independent study **1, 2, or 3 pts**
Registration only by permission of the instructor under whose guidance work will be undertaken. Proposals must have prior approval of the faculty member. Students studying for one point must plan to spend three hours weekly on the project, two points require six hours per week, and three points require nine hours per week.

D6022x and y. Independent study **1, 2, or 3 pts**
As stated under *D6021*.





Registration, Expenses, and Financial Aid

Registration

Auditing Courses

Regulations

Fees

Estimated Expenses

Financial Aid

Honors

Living Arrangements

Student Organizations

License to Practice



Registration, Expenses, and Financial Aid

Registration

Before students may attend classes they must register in person during the registration period (see the Academic Calendar) and fill out various forms required for University records. Late registration requires the approval of the Dean of the School and payment of a late fee (see under the listing of fees, below).

All students will be asked to give Social Security numbers when registering in the University. Those who do not have a number should obtain one from their local Social Security office well in advance of registration.

Auditing Courses

Certificate and degree candidates in good standing who are enrolled for a full-time program in the current term may audit one or two courses (except during the summer session) in any division of the University (excluding Barnard College and Teachers College) without charge by filing a formal application in the Registrar's Office (Black Building, Room 138) during the change-of-program period. Applications require (a) the certification of the Registrar that the student is eligible to audit and (b) the approval of the dean of the school in which the courses are offered.

For obvious reasons elementary language courses, laboratory courses, studio courses, applied music courses, and seminars are not open to auditors; other courses may be closed because of space limitations. In no case will an audited course appear on a student's record, nor is it possible to turn an audited course into a credit course by paying the fee after the fact. Courses previously taken for credit may not be audited.

Regulations

According to University regulations, each person whose registration has been completed will be considered a student of the University during the term for which he or she is registered unless the student's connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which the student is first registered.

The privileges of the University are not available to any student until he or she has completed registration. A student who is not officially registered for a University course may not attend the course unless granted auditing privileges (see Auditing Courses, above). No student may register after the stated period unless he or she obtains written consent of the appropriate dean or director.

The University reserves the right to withhold the privilege of registration or any other University privilege from any person with unpaid indebtedness to the University.

Attendance and Length of Residence

A student in good standing may, for a valid reason, be granted a leave of absence by the dean or director of the division of the University in which he or she is registered.

Students are held accountable for absences incurred owing to late registration.

No Dental Hygiene bachelor's degree will be granted to a student who has not registered for and attended Columbia University courses of instruction equivalent to two academic years of full-time work.

Religious Holidays

It is the policy of the University to respect its members' observance of their major religious holidays. Officers of administration and of instruction responsible for the scheduling of required academic activities or essential services are expected to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the academic calendar. Where scheduling conflicts prove unavoidable no student will be penalized for absence due to religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and the instructor involved, students and instructors should consult the appropriate dean or director. If an additional appeal is needed, it may be taken to the Provost.

Grading System and Requirements for Promotion and Graduation

D.D.S. Program

The following grading system is used: A, excellent; B, good; C, fair; F, failure; YC, year course; P, pass.

There are four standing faculty committees concerned with students' academic performance. These committees are the First-Year Class Committee, the Second-Year Class Committee, the Third-Year Class Committee, and the Fourth-Year Class Committee. These committees meet during each academic year to review student performance and to make decisions related to course failures and to promotions. A student may be admitted to the second, third, or fourth year of the dental curriculum only upon recommendation of the officers of instruction under whom the student has studied during the preceding year. Students are classified for promotion or readmission under the following categories: (1) recommended for advancement; (2) recommended for readmission to the same class; (3) not recommended for advancement or readmission to the same class.

Course failures in all years of the curriculum must be corrected according to the directives of the appropriate class committee. At the discretion of the class committee, in any year of the curriculum, students may be requested to repeat the year or may be dismissed for poor scholarship. Each class committee may direct a student whose performance is marginal to undertake additional work to correct deficiencies and strengthen overall performance in any discipline.

Students are informed in writing of the academic decisions of each class committee. Students have the right to appeal decisions of the committees. A student who wishes

to appeal may request that the concerned committee reverse or alter its decision. If the committee reaffirms the original decision, the student may direct an appeal to the Committee on Appeals of the School.

The School of Dental and Oral Surgery reserves the right to dismiss, or to deny admission, registration, readmission, or graduation to any student who in the judgment of the school is determined to be unsuited to the study or the practice of dentistry.

The degree of Doctor of Dental Surgery (D.D.S.) is awarded upon satisfactory completion of the prescribed curriculum.

The Postdoctoral Certificate Programs

The following grading system is used: A, excellent; B, good; C, fair; F, failure; YC, year course; P, pass.

To be awarded the certificate of training, a candidate must fulfill the following requirements to the satisfaction of the Postdoctoral Committee. The candidate must: (1) complete the prescribed courses and any required thesis; students wishing to be exempted from any of the prescribed courses may request a placement examination in the discipline involved, and the time made available by such exemptions will be planned and supervised by the Program Director for productive utilization; (2) pass prescribed written, oral, or practical examinations at the end of the period of residence; (3) attend special courses, when assigned, at hospitals or institutions affiliated with Columbia University but separate from the Medical Center; (4) any postdoctoral student receiving marginal grades in more than one subject in any one academic year may be advanced or promoted only upon special action and recommendation of the Postgraduate Committee; and, (5) satisfy the Postdoctoral Committee that he or she has completed all the specified requirements both clinical and academic for the certificate of training.

Dental Hygiene Programs

A Dental Hygiene Committee is appointed on an annual basis by the Dean of the School to review student performance and make all decisions concerning promotion, leave of absence, academic probation, and dismissal. This committee consists of faculty members from the Division of Dental Hygiene, the School of Dental and Oral Surgery, and the College of Physicians and Surgeons and the Dean and the Associate Dean for Academic Affairs of the School.

Students are entitled to meet with the Dental Hygiene Committee regarding matters of serious academic problems. Students are informed in writing of the academic decisions of this committee and have the right to appeal decisions of this committee. A student who wishes to appeal may request that the committee reverse or alter a decision. If the committee reaffirms the original decision, the student may direct an appeal to the Committee on Appeals of the School. The School reserves the right to dismiss, or to deny admission, registration, readmission, or graduation to any student who, in the judgment of the School, is judged to be unsuited to the conditions of study in the Division of Dental Hygiene.

The grading system is as follows: A, excellent; B, good; C, fair; D, minimum passing grade (undergraduate only); and F, failure.

Failure to obtain a passing grade is sufficient reason for asking a student to repeat the course or to resign. Students who fail courses with the D prefix are required to repeat them.

A student who fails a course but is permitted to remain in the program is placed on academic probation for the term following the course failure.

The mark of ABS (authorized absence from an examination) is given by the instructor with the approval of the Director. If the ABS is not removed prior to registration for the subsequent term, it will automatically be changed to F.

The mark of INC (incomplete) is given by the instructor with the approval of the Director only to a student who has satisfactorily met the requirements of the course, but who has been compelled for reasons beyond control to postpone certain assigned papers or reports. If the INC is not removed by the end of the next term, it is automatically changed to F. Students with three or more incomplete grades are not permitted to register for the next term.

The mark of P (Pass) has no numerical equivalent and is not calculated in the grade point average. All courses with the D prefix must be taken for letter grade. No more than 6 points of P credit may be credited toward the bachelor's degree. No more than 3 points of P credit may be credited toward the graduate degree.

The mark of R (registered for course, no qualitative grade assigned) is given only to students who indicate, when they register, their intention to take the course for R credit or who file notice of change of intention with the Registrar no later than the last day for change of program. A student who registers for R credit is not required to take the final examination, but may be required to meet any requirements established by the course instructor. Students who elect R credit should understand that degree credit is not awarded and that courses taken for R credit may not be repeated later for examination credit.

The mark of F* (failure due to unofficial withdrawal) is automatically assigned to a student who discontinues attendance in a course without formally notifying the Office of the Registrar. In case of failure due to unofficial withdrawal, the grade will be posted on the student's transcript, but grades of F* are not computed as part of the student's grade point average.

The mark of YC (year course) is given at the end of the first term of a course in which the full year's work must be completed before a qualitative grade is assigned. The grade given at the end of the second term is the grade for the entire course.

The required work—such as examinations, papers, written and oral reports, and class participation—for each course is prescribed solely by the instructor and the division. Most courses include a midterm and a final examination. The midterm is usually scheduled during a regular class period designated by the instructor. All final examinations are held during the official university examination period (see *Academic Calendar*). Final examinations are two, three, or four consecutive hours in length, depending on the point value of the course, the nature of the material, and the requirements of the instructor. Unauthorized absence from an examination automatically results in a failing grade. All examinations are proctored.

A student who has received the mark of ABS in any course must take a special examination before registration for the next term. The ABS is then changed to a letter grade.

A student who fails to receive a passing grade in any dental hygiene course is so notified by the division and, under circumstances determined by the instructor, may be requested to take a special examination. Special examinations are scheduled at the convenience of the instructor and the division. A student may take only one special examination in a course.

In order to continue in good standing, undergraduate students must maintain a 2.00 (C) average. All course and clinical grades in the major Preventive Oral Health Services sequences must be at the C— level or above. No more than 9 points of work

with the grade of D are credited toward the bachelor's degree. Credit for D work is accepted only for courses taken at Columbia University.

Graduate students must maintain a 2.7 (B-) average, but no more than 3 points of C or C- may be credited toward the graduate degree.

A student who fails to maintain these standards is placed on academic probation for one term. If grades do not improve during that term, a student may be asked to withdraw from the program.

Academic Discipline

The following statement on student discipline is in the Statutes of the University: "The continuance of each student upon the rolls of the University, the receipt by him [or her] of academic credits, his graduation and the conferring of any degree or the granting of any certificate, shall be subject to the disciplinary powers of the University which shall be free to cancel his registration at any time on any grounds it deems advisable."

Honor Code

Academic and intellectual integrity are accepted principles in the dental profession. An Honor Code, created and administered by the student body, is the formal acknowledgment of this understanding at the School of Dental and Oral Surgery. Each dental student is expected to abide by it.

Conduct

All members of the University community, its visitors and guests, are governed by the Rules of University Conduct which apply to all demonstrations, including rallies and picketing, that take place on or at a University facility. It is the student's responsibility to be aware of all provisions, regulations, and procedures contained in the Rules. Copies are available in the Office of the University Senate, 406 Low Memorial Library.

Changes in Programs of Study (Dental Hygiene)

Once registered, a student may drop or add courses or change sections by filing a formal change-of-program application with the Registrar during the change-of-program period each term (see the Academic Calendar). All such changes must first be approved by the student's adviser before submission to the Registrar.

Students may drop courses *after* the change-of-program period by following the same procedure; however, for individual courses dropped after the last day for change of program in each term, no adjustment of tuition is made. *Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and results in a failing grade in the course.*

Fees

The following fees are prescribed for the D.D.S. program, for each of the postdoctoral programs, and the dental hygiene programs. Fees are subject to change at any time at the discretion of the Trustees. Fees for partial programs are assessed by the Registrar as provided by the University statutes. Below are the fees for the 1980-1981 academic year.

University charges such as tuition and fees, residence halls, and board plans may be paid at the student's convenience during the term. The full amount of any charge may be paid when due without penalty, or payment may be made in installments. If partial payments are made, a monthly finance charge is assessed on amounts not paid by the due date shown on the monthly bill. In either event, however, the student is required to sign at the time of registration a Retail Installment Credit Agreement which sets forth the full terms and conditions of payment. All charges must be paid by the end of the term.

If registration is not completed during the scheduled registration dates the fees will not be reduced and a prorated late fee will be imposed. Checks for tuition and fees should be made payable to Columbia University.

Tuition

Full-time D.D.S. students, per academic year	\$8,460.00
Full-time certificate students, per academic year	8,210.00
Full-time dental hygiene students	
Autumn and spring terms, per term	2,770.00
Part-time dental hygiene students, for courses, per point	185.00

Health Service and Hospital Insurance Fees

Full-time D.D.S., dental hygiene, and certificate students per year (September 1–August 31)*	
Health Service Fee	\$255.00
Hospital Insurance Premium	157.00

The student health service fee contributes to the cost of operating the Student Health Service. The hospital insurance fee pays the annual premium of the Associated Hospital Service of New York. Participation in these programs is compulsory for all full-time students; students who already carry hospital insurance, however, will be charged the health service fee only. Part-time students are encouraged to participate in the combined health plan. Upon payment of additional fees, students can acquire hospital insurance for their dependents and the latter are eligible to receive the benefits of the health service program. Students should consult the Office of the Registrar, Black Building, Room 138, for further information on dependent coverage.

The Student Health Service, which holds daily office hours, is on the street level of Bard Haven Tower 1 (60 Haven Avenue).

All entering students are required to have a physical examination at the School of Dental and Oral Surgery Health Service.

Application Fees and Late Fees

Application for admission	\$35.00
Late application, or late renewal of application, for a degree or certificate	25.00

*Candidates for the M.S. degree who are admitted in January pay approximately one-half the annual hospital insurance premium at their first registration.

Late Registration Fees

	<i>Full-time</i>	<i>Part-time</i>
During late registration	\$25.00	\$25.00
Up to 4 weeks after late registration	50.00	35.00
4 to 8 weeks after late registration	75.00	45.00
8 to 12 weeks after late registration	100.00	55.00
Beyond 12 weeks after late registration	125.00	65.00

Fees for Repeated Courses

A student who is required to repeat the work for any one year must pay the full tuition and fees. Repeated courses are paid on a per point basis.

Withdrawal and Adjustment of Fees

Students in good academic standing who are not subject to discipline will always be given an honorable discharge if they wish to withdraw from the University. Students who decide to withdraw from the University must notify the Dean and the Registrar at once. For dental hygiene students who are under twenty-one years of age, their parents or a guardian must first give consent in writing to the Director of the Division of Dental Hygiene.

If a student withdraws from the School, a partial return of the tuition may be authorized by the Registrar. Any adjustment of the tuition that the student has paid is reckoned from the date on which the Registrar receives the student's written notification. Application fees, late fees, and special fees are not subject to rebate. Up to and including the second Saturday after the first date of classes tuition will be retained in the following amount:

Full-time study	\$50.00
Part-time study	25.00

After the second Saturday after the first day of classes in the term, the above amount is retained, plus an additional percentage of the remaining tuition (as indicated in the adjustment schedule), for each week, or part of a week, of the term up to the date on which the student's written notice of withdrawal is received by the Registrar.

Adjustment Schedule

	<i>Minimum Tuition Retained</i>	<i>Percentage of Remaining Tuition Retained</i>
Second Saturday after first day of classes	\$25 or \$50	0
Following week	25 or 50	10
Second following week	25 or 50	20
Third following week	25 or 50	30
Fourth following week	25 or 50	45
Fifth following week	25 or 50	60
Sixth following week	25 or 50	75
Seventh following week	25 or 50	90
Eighth following week	25 or 50	100 (no adjustment)

Application or Renewal of Application for Degrees or Certificates

Degrees and Certificates are awarded three times a year—in October, January, and May. A candidate for any Columbia degree or certificate must file an application with the Registrar, Room 138, Black Building, by the date specified in the Academic Calendar. After the dates specified in the Academic Calendar and until the expiration of the *late* filing period for each conferral date a late fee of \$25 will be charged. Applications received *after* the late filing period will automatically be applied to the next conferral date.

If the student fails to earn the degree by the conferral date for which he or she has made application, the student may renew the application. A \$25 late fee will be charged for late filing of renewals of application according to the same schedule as for original applications.

Requests for Transcripts

The Family Educational Rights and Privacy Act of 1974 as amended prohibits the release of educational records by institutions without the specific written consent of the student or alumnus. Students or alumni may request copies of their records by writing to the Office of the Registrar, 630 West 168th Street, New York, N.Y. 10027. *Official* copies will be sent directly by the University only to an official address such as another university, a business firm, or government agency. However students or alumni may request that unofficial copies of their transcripts (stamped "Student Copy") be sent directly to them.

There is a charge of \$2 for each transcript requested except for intrauniversity copies sent between University offices. Transcript requests are processed in the order received and require five to seven working days for processing. Specific deadlines should be mentioned, and checks accompanying requests should be made payable to Columbia University.

Estimated Expenses

D.D.S. Program

Books. The approximate cost of books will be: in the first year, \$750; in the second year, \$600; in the third year, \$200; in the fourth year, \$100. Book lists are posted for each class during registration week. Books may be purchased from the Medical Center Bookstore on the first floor of the College of Physicians and Surgeons. The store is maintained expressly for the convenience of the students and staff of the Medical Center schools and hospitals.

Instruments and Supplies. Each student must purchase from the University a package of instruments necessary for preclinical and clinical dental instruction. The estimated cost of these instruments for students entering in September 1981 is approximately \$5,000, and arrangements have been made to spread the \$5,000 expenditure over the four-year period. In addition to the purchased instruments, students are provided with certain clinical instruments for use during the third and fourth years, at a rental fee of \$50 a year. Rental equipment assigned to students must be returned. A charge is made for loss, breakage, and abnormal wear.

Microscopes. During the first and second years microscopes are provided by the School for a rental of \$50 a year. If a student prefers to provide his or her own microscope, the student must have it approved by the Department of Anatomy. It is recommended that the microscope be of standard make equipped with: (a) quadruple nose piece; (b) Abbe or variable focus condenser; (c) 4x, 10x, 43x objectives; (d) 96x oil immersion lens; (e) 10x wide field eye piece; (f) mechanical stage; (g) attached lamp; (h) carrying case.

The cost of a new microscope ranges from \$500 to \$750, and of a reconditioned microscope from \$200 to \$500. Arrangements for approval and for purchase or rental should be made before registration for the opening term.

Variations in these estimated costs may be necessary because of price fluctuations or new developments. These figures are presented as a guide for student planning. Students must *not* present checks made in advance and based on these figures. Details are sent immediately prior to registration.

Lockers. Each entering student is assigned a locker; the student must use a combination lock as prescribed by the School.

Postdoctoral Certificate Programs

Since the prices of books and instruments may fluctuate and since it may be necessary for the School to make substitutions because of supply shortages, the figures given below for instruments and books are only approximate.

<i>Program</i>	<i>Tuition (2 years)</i>	<i>Instruments</i>	<i>Books</i>
Endodontics	\$16,420	See note*	\$250
Orthodontics	16,420		300
Pedodontics (cerebral palsy)	16,420		200
Periodontics	16,420		250

IMPORTANT: According to Treasury decision 6291, under Section 162 of the 1954 Internal Revenue Code, income tax deductions are allowed in many instances for tuition and other educational expenses. Students are referred to the federal ruling on income tax deductions for teachers and other professional people seeking to maintain or improve skills in their employment.

Dental Hygiene Programs

In addition to the tuition and fees, approximate first-year costs are:

Room and board	\$3,000
Books	350
Instruments and equipment	450
Uniforms and accessories	150

*Instrument rental is required for students enrolled for graduate certificates and for dental hygiene degrees. Dental handpieces and expendable supplies must be purchased by the student. An allocation of purchase and rental responsibilities is provided prior to registration.

In addition to the tuition and fees given above, approximate second-year costs are:

Room and board	\$3,000
Books	200
Instruments and equipment	100*
Uniforms and accessories	50

Financial Aid

Students may apply for financial aid through the Financial Aid Office. The Financial Aid Office assists students in the processing of state student loan applications and other external forms of student aid. Distribution of school-based aid (Columbia University administered loans and grants) is determined on the basis of need. The School utilizes the Graduate and Professional School Financial Aid Service (GAPS-FAS) to determine each student's need. Each student's need is re-examined *annually* to assure continued equitable distribution of aid. Information concerning cost of education, application procedures, forms, and deadlines is sent to the newly admitted student as part of the financial aid booklet.

The heavy schedule of the School makes it difficult for D.D.S. students to undertake outside part-time work during the academic year. Summer work-study positions are available to entering and first-year students. Second- and third-year students performing clinical duties during the summer session are able to participate in the work-study program on a limited basis.

Additional questions may be directed to the Financial Aid Office, Columbia University School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032; telephone (212) 694-3478.

Financial aid is defined as those resources available which assist the student in meeting educational costs. These include parental and student resources, state or federally insured student loans, state scholarship or incentive awards, university loans and school grants. The following is a list of the programs in which dental students participate. It is recommended that students consult the financial aid booklet for current updates on these programs.

State Loans

Each state participates in a federal guaranteed student loan program. Students are eligible to apply either directly to their home state or through a state guarantee agency. Applications and program information may be obtained through lenders (banks, credit unions, or pension or welfare funds). Consult the financial aid booklet for updated information.

Columbia University Loans

Student loans are available to Columbia University degree candidates on the basis of financial need. These funds may be used for tuition, fees, books and supplies, and subsistence. Unusual or excessive personal expenses that fall outside the normal student budget may not be included. Student loans are not intended to cover the

**Instrument rental is required for students enrolled for graduate certificates and for dental hygiene degrees. Dental handpieces and expendable supplies must be purchased by the student. An allocation of purchase and rental responsibilities is provided prior to registration.*

entire cost of attending the University but are meant, rather, to supplement a student's own resources. Repayment of a Columbia University loan must begin when a student ceases to be registered as a full-time degree candidate at the University and may be extended over a period of ten years, as long as the minimum monthly payment does not fall below \$30.

National Direct Student Loans — Health Professions Loans

These funds are provided through federal legislation. National Direct Student Loans are provided for degree candidates in the Division of Dental Hygiene and the D.D.S. program; Health Professions Loans are for D.D.S. candidates. The assignment of these funds is at the discretion of the School as part of financial aid distribution. Consult the financial aid booklet for details on terms, interest rates, and repayment terms.

New York State Tuition Assistance Plan (T.A.P.)

Any student in the D.D.S. program or in the Division of Dental Hygiene who has been a legal resident of New York State for the preceding year is eligible for a New York State Tuition Assistance Plan (T.A.P.) award for each term in which he or she is registered as a full-time degree candidate. The amount of this award is based upon the net taxable balance of the student's income and the income of those responsible for his or her support, as reported on the New York State income tax return for the previous calendar year. Further information and application forms can be obtained from the New York State Higher Education Services Corporation, Tower Building, Empire State Plaza, Albany, New York 12255.



Pell Grants—Formerly Basic Educational Opportunity Grants (B.E.O.G.)

Undergraduate students enrolled for at least a half-time course of study who have not completed a bachelor's degree are eligible to apply for a grant based on financial need. Applications are available from Basic Grants, Box 84, Washington, D.C. 20044.

Postgraduate Periodontics Student Loan Fund

The David Monahan Postgraduate Periodontics Student Loan Fund is used to help periodontic postgraduate students who are in financial need. No interest will be charged while the student is in the program, but will be applied upon graduation at a low rate. Loans are to be repaid within five years of leaving the program. For further information contact the director of the periodontics program.

The Clark Foundation Scholarships

Several partial scholarship grants are available for applicants for the D.D.S. program and students already in the D.D.S. program. Grants are made on a yearly basis to applicants for students who show evidence of high academic standing, outstanding recommendations, and financial need. Consult the financial aid booklet for instructions on application.

American Dental Hygienists' Association Scholarships

The ADHA Foundation offers a scholarship program for full-time students who have a minimum grade point average of 2.50 (on a 4.0 scale) for the following groups:

Certificate Scholarship Program. For students enrolled in a certificate/associate degree program or a bachelor's degree program and entering the second year of the dental hygiene curriculum.

Post-Certificate/Baccalaureate Scholarship Program. For students who are graduates of a certificate/associate degree program and can provide evidence of acceptance as a full-time bachelor's degree candidate in an accredited four-year college or university.

Post-Certificate/Master's Fellowship Program. For students who are licensed dental hygienists and hold a bachelor's degree or will receive a bachelor's degree at the end of the current academic year and can provide evidence of acceptance as a full-time master's degree candidate in a university graduate program.

Information about the ADHA Scholarship Program can be obtained from the American Dental Hygienists' Association Foundation, 444 N. Michigan Avenue, Suite 3400, Chicago, Illinois 60611.

The National Dental Hygienists' Association Scholarship Program

An eligible student must be a member of a minority race (Black, Spanish Surname,

American Indian, Mexican American, or Oriental), must have completed at least the first semester of a dental hygiene program with a scholastic average of 2.5 or better, and must show financial need.

Information about the National Dental Hygienists' Association Scholarship Program can be obtained from Scholarship Chairperson, NDHA, Lincoln Land Community College, Shepherd Road, Springfield, Illinois 62708.

Dental Hygienists' Alumni Association of Columbia University

The Dental Hygiene Alumni Association of Columbia offers scholarship awards on an annual basis to students with demonstrated financial need and in good academic standing. Undergraduate and graduate students in matriculation are eligible to apply for these funds. Information about these awards can be obtained from the Division of Dental Hygiene.

School of Dental and Oral Surgery: Teaching Assistant Program

A limited number of teaching assistantships are available to master's degree candidates on a competitive basis. Under this arrangement, a student is assigned to a division of the School of Dental and Oral Surgery for two and one-half days a week and carries out functions assigned by that division. In return, the student receives tuition exemption at the rate of 8 points per term and a monthly living stipend. The 32-point master's degree program is completed in two academic years under this arrangement. Eligibility is based on being an accepted degree candidate. Additional information can be obtained from the Director of the Division of Dental Hygiene.

Honors

D.D.S. Program

Alpha Omega Scholarship Award. A plaque presented to the graduating student (not necessarily an Alpha Omegan) with the highest scholastic average for the four years of dental studies. First awarded in 1949.

American Academy of Oral Medicine. A certificate and a subscription to the *Journal of Oral Medicine*, awarded to a fourth-year student for excellence in this field.

American Academy of Gold Foil Operators. Certificate awarded to a fourth-year student for excellence in gold foil technique.

American Academy of Dental Radiology. A certificate awarded to a fourth-year student for excellence in this field.

American Academy of Periodontology. A student award certificate and a one-year subscription to the journals published by the American Academy of Periodontology, awarded to an outstanding student in periodontics.

American Association of Oral Pathology. A certificate to the graduating student who has shown the most interest, accomplishment, and promise in the field of oral pathology.

American Association of Orthodontists. A certificate awarded to a student showing exceptional interest and special aptitude in orthodontics.

American College of Dentists, New York Section. An award of \$100 and a plaque or scroll. Presented to a third-year student who is a good all-around student, a member of the student section of the American Dental Association, and who exhibits leadership.

American Dental Society of Anesthesiology, Inc. An award certificate and a one-year subscription to *Anesthesia Progress*, awarded to a fourth-year student who has shown outstanding ability or interest in the field of pain control.

American Society of Dentistry for Children. A certificate, one year of membership in the Society, and a one-year subscription to *The Journal of Dentistry for Children*, awarded to a fourth-year student.

Herbert J. Bartelstone Award in Pharmacology. An award given annually to a member of the graduating class of the College of Physicians and Surgeons and a member of the graduating class of the School of Dental and Oral Surgery who have demonstrated exceptional accomplishments in pharmacology.

William Bailey Dunning Award for Excellence in Periodontology. A medal awarded to the graduating student who is the most proficient in periodontology. First awarded in 1957.

Ella Marie Ewell. A medal awarded to the graduating student who in the best judgment of the faculty has exhibited meritorious service to students, faculty, and the University.

Long Island Academy of Odontology. A certificate awarded to a student showing exceptional proficiency in preventive dentistry.

Arthur Merritt Award. A certificate and award of \$50 to the outstanding fourth-year student in periodontics.

Prize for Excellence in Operative Dentistry. A certificate awarded by the staff of the Division of Operative Dentistry to the graduating student who has shown the greatest proficiency in operative dentistry.

Certificate for Excellence in Pedodontics. A plaque awarded to a graduating student for excellence in pedodontics. Established by the Class of 1929.

Psi Omega Fraternity Award. A plaque presented by the Gamma Lambda Chapter to the graduating student who has displayed exemplary professional conduct.

Rowe-Wiberg Medal. An award made by the Association of Dental Alumni to the graduating student who has shown the greatest proficiency in prosthetic dentistry.

Van Woert Award. A scholarship given to the senior dental student, at the beginning of the year, who has high scholastic attainment and personal character as well as need for financial assistance.

Women's Auxilliary to the 11th District Dental Society. An award of \$150 to a deserving fourth-year student who is a resident of the Borough of Queens.

Dental Hygiene Program

Blackerby Award. Awarded by the Dental Hygiene Faculty to the graduate of Program B who demonstrates scholastic honors and leadership potential.

Clinical Proficiency Award. Awarded by the Dental Hygienists' Association of the City of New York to honor the student who demonstrates the greatest proficiency in the clinical practice of dental hygiene. A certificate and payment of dues to cover one year's membership in the American Dental Hygienists' Association and its component and constituent associations is provided annually.

John Opie McCall Award. Awarded to the dental hygiene student who demonstrates proficiency in the area of periodontics.

Patricia McLean Award. Awarded by the Dental Hygiene Alumni Association of Columbia University to the graduate of the Master of Science degree program who demonstrates scholarship and leadership potential.

Sigma Phi Alpha, Lambda Chapter. Sigma Phi Alpha is a National Honor Society established in schools of dental hygiene to recognize scholarship, service, and character among students. Membership is awarded to the top 10 percent of the graduating class, based on scholastic standing and leadership potential.

The Albert H. Stevenson Medal. Awarded by the Dental Society of the State of New York to an honor student from each of the dental hygiene schools in the State. It commemorates the interest and work of Dr. Stevenson in the field of dental hygiene.

The F. J. Swanson Medal. Awarded since 1920 by Dr. F. J. Swanson to the student who demonstrates excellence in theory and practice.

Living Arrangements

Health Sciences Campus

The University seeks to provide housing for all students who are regularly registered for an approved program of full-time academic work. In recent years, however, a housing shortage has developed in New York City, and on occasion the demand for University housing has exceeded the number of spaces available.

University housing on the Health Sciences campus includes 154 Haven Avenue, Bard Hall (50 Haven Avenue), Bard Haven (100 Haven Avenue), and the Anna C. Maxwell Hall (179 Fort Washington Avenue). In addition, many students reside in local privately owned apartment buildings. The Health Sciences campus housing office, located in Bard Hall, maintains records of various University housing units as well as a current list of private apartments available in the surrounding neighborhood. The Office of Student Affairs of the School of Dental and Oral Surgery acts as a clearing house for students who are seeking apartments and those who may wish to share an apartment, and maintains close contact with the Bard Hall housing office.

It is important that entering students who wish to reside in the vicinity of the Medical Center, upon notification of acceptance, promptly contact the Office of Student Affairs as well as the housing office for advice and current housing information.

All housing applications should be submitted as early as possible. Applications and information concerning room availability and rates will be furnished upon request by

the Resident Manager of Bard Hall, 50 Haven Avenue, New York, N.Y. 10032. The Office of Student Affairs is located in Room 2-239 of the Black Building; telephone (212) 694-4085.

Morningside Campus

Limited housing is provided for undergraduate and graduate men and women who are registered either for an approved program of full-time academic study or for doctoral dissertation research. Requests for information and application forms should be directed to the Assignments Office, 113 Livingston Hall, Columbia University, New York, N.Y. 10027.

Off Campus

The University also operates the Registry of Off-Campus Accommodations, which endeavors to help students find rooms or apartments in rental properties not owned or operated by the University. Listings are varied, change quickly, and are not inspected or approved by the University. It is, therefore, necessary to visit the office, in Hartley Hall, to read the listings and arrange to evaluate personally any that may be of interest. It is advisable to telephone (212) 280-2773 in advance to determine the best time for a visit to the registry.

International House, a privately owned student residence and program center near the campus, has accommodations for about five hundred graduate students, both foreign and American. Rates for the academic year range from approximately \$180 to \$225 a month, including membership fees; students should anticipate a yearly cost-of-living increase. A cafeteria, recreational facilities, and a varied cultural and professional program are available to members. To be eligible for admission a student must be at least twenty-one years old and must be registered for at least 12 points or the equivalent. Inquiries should be addressed to the Admissions Office, International House, 500 Riverside Drive, New York, N.Y. 10027.

Student Organizations and Activities

Student Council

In accordance with the plan for all schools in the University, the students are organized under a Student Government Association. Through this organization the students have representation on the Columbia University Student Council, and are eligible for participation in the many activities at the Medical Center and on the Morningside campus.

Omicron Kappa Upsilon

Epsilon Epsilon chapter of Omicron Kappa Upsilon, national honorary fraternity, was chartered in the School of Dental and Oral Surgery in 1934. The purpose of the fraternity is to recognize and honor a maximum of 12 percent of the members of the graduating D.D.S. class on the basis of scholarship, character, and potential for further professional growth and attainments.

The William Jarvie Society

The William Jarvie Society for Dental Research is a nonsecret, dental honor society, membership in which is based on scholarship and interest in dental research, and for which second-, third-, and fourth-year D.D.S. students are eligible. The society was organized in the School of Dental and Oral Surgery in 1920 and named after Dr. William Jarvie because of his wide interest in the promotion of dental research. The society aims to promote the spirit of research among the students.

The Student Dental Association

The Student Dental Association of Columbia University was established in 1960 to provide a professional and social forum in which D.D.S. candidates would participate. The general program of this organization is patterned after the program of local dental societies, in which the graduate dentist contributes to the organized dental profession. Undergraduate dental students are exposed to the democratic process of organization function, policy development, and programming as they meet their responsibilities for supporting the program of their association.

Student American Dental Hygienists' Association

All students in the Division of Dental Hygiene belong to this association, which meets monthly. The purpose is to foster an interest in the work of the American Dental Hygienists' Association and to prepare students for admission after graduation to full and active membership in the professional organizations.

Foreign Students

The staff of the Office of the Foreign Student Adviser on the Morningside Campus provides advice and counseling to foreign students on such matters as housing, personal and financial problems, and regulations of the United States Immigration and Naturalization Service (visas, extensions to stay, work permission, temporary departure from the United States, transfer from Columbia to another school, termination of study). Information about the various foreign student clubs at Columbia and about opportunities to attend conferences, travel in the United States, and participation in community and cultural activities can be obtained from this office. Maps of New York City and discount tickets to concerts and plays are available.

The staff of the Office of Foreign Student Admissions provides information and counseling on University admission, advanced standing, English proficiency examinations, and academic placement.

Postdoctoral Programs

Student organizations in the postdoctoral disciplines are open to membership. The Program Director should be contacted for additional information.

License to Practice

Dentistry

Successful performances in Parts I and II of the examinations given by the Council of the National Board of Dental Examiners are preliminary requirements for licensure in most states of the United States, including New York.

Those seeking licensure solely in New York State may take the final or clinical examinations offered by the Board of Dental Examiners of the State of New York. Successful completion of these examinations entitles the applicant to licensure, assuming the prerequisites of good moral character, citizenship, or declaration of intention of becoming a citizen, are fulfilled. For additional information request a copy of Handbook 10, *Professional Education*, from the Division of Professional Licensing Services, New York State Department of Education, Albany, N.Y. 12201.

It is advisable, however, that candidates for licensure take the clinical examinations offered by the North East Regional Board of Dental Examiners, the content and format of which are identical to those of New York State. Successful completion of these examinations, together with fulfillment of such minor prerequisites as may be required by individual states, permits licensure in the states of Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia, and the District of Columbia, as well as New York State.

Additional information, including applications, format of examinations, and examination schedules are available from the North East Regional Board of Dental Examiners, 4645 Deane Avenue N.E., Washington, D.C. 20019.

Dental Hygiene

Candidates for licensure by examination in all states are required to achieve passing scores on the National Board Dental Hygiene Examination as a preliminary requirement.

In addition, candidates must take a clinical examination offered by individual states or regional testing agencies, such as the North East Regional Board. Successful completion of this examination, together with fulfillment of minor prerequisites as may be required by individual states, permits licensure in the states listed above under License to Practice Dentistry.

Candidates seeking licensure solely in New York State may take the examination administered by the New York State Board for Dentistry after presenting qualifying evidence of good moral character, United States citizenship or a Formal Declaration of Intention of Becoming a Citizen, and proof of graduation from a dental hygiene program registered by the State Education Department.

Additional information, including applications, format of examinations, and examination schedules are available from the Council on National Board Examinations, ADA, 211 East Chicago Avenue, Chicago, Ill. 60611; North East Regional Board of Dental Examiners, 2504 Virginia Avenue, N.W. Washington, D.C. 20037; and the State Education Department, Division of Professional Licensing Services, Empire State Plaza, Albany, New York 12230.





Officers of Instruction

Anatomy

CHAIRMAN: Professor Michael D. Gershon

ERNEST W. APRIL. *Associate Professor of Anatomy*
B.S., Tufts, 1961; Ph.D., Columbia, 1969

PHILIP W. BRANDT. *Associate Professor of Anatomy*
B.A., Swarthmore, 1952; M.S., Pennsylvania, 1957; Ph.D., Columbia, 1960

ARLINE D. DEITCH. *Associate Professor of Clinical Pathology (in Anatomy)*
B.A., Brooklyn, 1944; M.A., Columbia, 1946; Ph.D., 1954

CHARLES A. ELY. *Professor of Anatomy*
B.A., Washington and Jefferson, 1936; M.S., Hawaii, 1940; Ph.D., Wisconsin, 1948

MICHAEL D. GERSHON. *Professor of Anatomy*
B.A., Cornell, 1958; M.D., 1963

JAMES P. KELLY. *Assistant Professor of Anatomy*
B.A., Harpur, 1966; Ph.D., Washington (St. Louis), 1971

DANIEL M. LINKIE. *Assistant Professor of Anatomy (in Obstetrics and Gynecology)*
B.S., State University of New York (Downstate), 1962; M.S., 1963; Ph.D., Michigan, 1971

MARIE-FRANCE MAYLIE-PFENNINGER. *Assistant Professor of Anatomy*
Lic.Sci., Marseilles, 1963; Dr. Spécialité (Biochemistry), 1967; Ph.D., 1972

MELVIN L. MOSS. *Professor of Anatomy and Professor of Dentistry*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

LETTY MOSS-SALENTIJJN. *Associate Professor of Dentistry (Orofacial Development)*
D.D.S., Utrecht, 1967; Ph.D., 1976

CHARLES R. NOBACK. *Professor of Anatomy*
B.S., Cornell, 1936; M.S., New York University, 1938; Ph.D., Minnesota, 1942

ELADIO A. NUNEZ. *Associate Professor of Anatomy*
B.S., St. John's (New York), 1951; M.S., 1953; Ph.D., New York University, 1964

KARL H. PFENNINGER. *Associate Professor of Anatomy*
M.D., Zurich, 1971

ANN-JUDITH SILVERMAN. *Assistant Professor of Anatomy*
B.A., California (Los Angeles), 1967; Ph.D., 1970

VIRGINIA M. TENNYSON. *Professor of Anatomy and Pathology*
B.S., Pennsylvania State, 1946; M.S., Baylor, 1956; Ph.D., Columbia, 1960

Anesthesiology

CHAIRMAN: Professor Henrik H. Bendixen

HENRIK H. BENDIXEN. *Professor of Anesthesiology*
M.D., Copenhagen, 1951

LESTER C. MARK. *Professor of Anesthesiology*
M.D., Toronto, 1941

S. H. NGAI. *Professor of Anesthesiology*
M.B., National Central (China), 1944

Biochemistry

CHAIRMAN: Professor Isidore S. Edelman

RICHARD AXEL. *Professor of Biochemistry and Pathology*
B.A., Columbia, 1967; M.D., Johns Hopkins, 1970

HAGEN P. BAYLEY. *Assistant Professor of Biochemistry*
B.Sc., Oxford, 1974; Ph.D., Harvard, 1979

REINHOLD BENESCH. *Professor of Biochemistry*
B.Sc., Leeds, 1941; M.Sc., 1945; Ph.D., Northwestern, 1950

RUTH E. BENESCH. *Professor of Biochemistry*
B.Sc., London, 1946; Ph.D., Northwestern, 1951

ROGER M. BURNETT. *Associate Professor of Biochemistry*
B.Sc., London, 1964; Ph.D., Purdue, 1970

ISIDORE S. EDELMAN. *Robert Wood Johnson, Jr., Professor of Biochemistry*
B.A., Indiana, 1941; M.D., 1944

MAX A. EISENBERG. *Professor of Biochemistry*
B.A., Brooklyn, 1938; M.S., New York University, 1941; Ph.D., Duke, 1950

PHILIP FEIGELSON. *Professor of Biochemistry (assigned to Cancer Research)*
B.S., Queens (New York) 1947; Ph.D., Wisconsin, 1951

STEPHEN GOFF. *Assistant Professor of Biochemistry*
B.A., Amherst, 1973; Ph.D., Stanford, 1978

ALLEN M. GOLD. *Associate Professor of Biochemistry*
B.A., Chicago, 1950; Ph.D., Harvard, 1955

DEZIDER GRUNBERGER. *Associate Professor of Biochemistry (assigned to Cancer Research)*
M.Sc., Technical University (Prague), 1950; Ph.D., Czechoslovak Academy of Sciences, 1956; Sc.D., 1968

ARTHUR KARLIN. *Professor of Biochemistry and Neurology*
B.A., Swarthmore, 1957; Ph.D., Rockefeller, 1962

ALVIN I. KRASNA. *Professor of Biochemistry*
B.A., Yeshiva, 1950; Ph.D., Columbia, 1955

SEYMOUR LIEBERMAN. *Professor of Biochemistry (assigned to Obstetrics and Gynecology)*
B.S., Brooklyn, 1936; M.S., Illinois, 1937; Ph.D., Stanford, 1941

BARBARA W. LOW. *Professor of Biochemistry*
B.A., Oxford, 1942; M.A., 1946; D.Phil., 1948

LEE MAKOWSKI. *Assistant Professor of Biochemistry*
B.S., Brown, 1971; M.S., Massachusetts Institute of Technology, 1973; Ph.D., 1976

MAURICE RAPPORT. *Professor of Biochemistry (assigned to Psychiatry)*

B.S., College of the City of New York, 1940; Ph.D., California Institute of Technology, 1946

SOL SPIEGELMAN. *University Professor (Director of the Institute of Cancer Research) (also Human Genetics)*

B.S., College of the City of New York, 1939; M.S., Columbia, 1942; Ph.D., Washington (St. Louis), 1944

PARITHYCHERY R. SRINIVASAN. *Professor of Biochemistry*

B.Sc., Madras, 1946; Ph.D., 1953

KAMIL UGURBIL. *Assistant Professor of Biochemistry*

B.A., Columbia, 1971; M.S., 1974; Ph.D., 1976

BONNIE A. WALLACE. *Assistant Professor of Biochemistry*

B.S., Rensselaer Polytechnic Institute, 1973; M.Phil., Yale, 1975; Ph.D., 1977

Dental and Oral Surgery

CHAIRMAN: Professor Allan J. Formicola

Behavioral Science

DIRECTOR: Professor Stephen Wotman

JAY K. WEISS. *Associate Clinical Professor of Dentistry*

B.A., Harvard, 1948; D.M.D., Tufts, 1952

STEPHEN WOTMAN. *Associate Professor of Dentistry*

D.D.S., Pennsylvania, 1956

PHILIP YABLON. *Assistant Clinical Professor of Dentistry*

B.S., College of the City of New York, 1955; D.D.S., Columbia, 1959; M.P.H., 1973

Community Health

DIRECTOR: Professor Harriet S. Goldman

JULIUS R. BERGER. *Adjunct Associate Professor of Dentistry*

B.S., College of the City of New York, 1961; D.D.S., Buffalo, 1965

MALVIN F. BRAVERMAN. *Assistant Clinical Professor of Dentistry*

D.M.D., Pennsylvania, 1966

RONALD P. BURAKOFF. *Adjunct Professor of Dentistry*

B.Sc., McGill, 1969; D.M.D., Tufts, 1973; M.P.H., North Carolina, 1974

NEAL A. DEMBY. *Associate Clinical Professor of Dentistry*

B.A., Rutgers, 1964; D.M.D., Pennsylvania, 1968

JEFFREY GOLD. *Assistant Clinical Professor of Dentistry*

B.A., Brooklyn, 1965; D.D.S., New York University, 1969

ARTHUR D. GOLDMAN. *Adjunct Assistant Professor of Dentistry*

D.M.D., Tufts, 1957

HARRIET S. GOLDMAN. *Assistant Professor of Dentistry*

B.A., New York University, 1962; D.D.S., 1965; M.P.H., Columbia, 1966

- HILTON O. HOSANNAH. *Assistant Clinical Professor of Dentistry*
B.S., Howard, 1952; D.D.S., 1958; M.P.H., Columbia, 1970
- LEON E. JOSEY. *Adjunct Assistant Professor of Dentistry*
B.S., Howard, 1954; D.D.S., 1960
- JAMES E. MCINTOSH. *Adjunct Assistant Professor of Dentistry*
B.A., Missouri, 1965; D.D.S., Meharry, 1969; M.P.H., Columbia, 1975
- MELVIN N. RASKIN. *Adjunct Assistant Professor of Dentistry*
B.S., New Hampshire, 1938; D.M.D., Tufts, 1943
- SANFORD S. ROTHSTEIN. *Adjunct Assistant Professor of Dentistry*
B.S., Massachusetts, 1957; D.D.S., Temple, 1962; M.P.H., Columbia, 1980
- IONA I. SABEV-NIKOW. *Adjunct Assistant Professor of Dentistry*
D.D.S., Howard, 1968; M.P.H., Columbia, 1971
- WILLIAM R. SMITHEA. *Adjunct Associate Professor of Dentistry*
D.D.S., Howard, 1959
- BERNARD A. SUTHERLAND. *Adjunct Assistant Professor of Dentistry*
B.A., B.Sc., Atlantic Union, 1958; D.D.S., Howard, 1963; M.P.H., Michigan, 1974
- PETER B. TERENCE. *Professor of Clinical Dentistry*
L.L.B., Connecticut, 1940; M.H.A., Northwestern, 1950
- BURTON S. WASSERMAN. *Adjunct Professor of Dentistry*
B.A., New York University, 1953; D.D.S., 1957
- LOUIS F. WEISKOPF. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1968; D.D.S., Columbia, 1972

Dental Auxiliary Utilization

DIRECTOR: Professor David Kaplan

- VICTOR H. BORIS. *Assistant Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1944
- S. GERALD CARDINALE. *Assistant Clinical Professor of Dentistry*
B.S., St. John's (New York), 1955; D.D.S., New York University, 1959
- IRWIN DAMBROT. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1950; D.D.S., Columbia, 1955
- STEPHANIE A. FINTEL. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1955
- ABRAHAM J. KADISH. *Assistant Clinical Professor of Dentistry*
B.S., Rutgers, 1960; D.M.D., Pennsylvania, 1965
- JOSEPH E. KAUFER. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1943; D.M.D., Pittsburgh, 1946
- DAVID KAPLAN. *Associate Professor of Dentistry*
B.S., College of the City of New York, 1958; D.D.S., New York University, 1960
- MORRIS S. KIRSCHNER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1937; D.M.D., Louisville, 1941

MATTHEW D. LEVIN. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1926

HOWARD M. ROMBOM. *Assistant Professor of Dentistry*
B.A., New York University, 1973; M.A., Hofstra, 1975; Ph.D., 1976

ALBERT J. THOMPSON. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1954; D.D.S., 1960

BERNARD B. TOLPIN. *Assistant Professor of Dentistry*
B.A., Michigan, 1956; D.D.S., Columbia, 1960

PAUL D. WEINER. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1950; D.D.S., Temple, 1955

PEARL-DEBORAH WEISFUSE. *Assistant Professor of Dentistry*
B.A., Hofstra, 1970; M.S., State University of New York (Downstate), 1973; D.M.D., Pennsylvania, 1977

Dental Hygiene

DIRECTOR: Professor Dona E. Wayman

JUDITH L. GOODRICH. *Assistant Professor of Dentistry*
B.S., Loma Linda, 1967; M.A., Columbia, 1977

OLGA A. IBSEN. *Assistant Clinical Professor of Dentistry*
A.A.S., State University of New York (Farmingdale), 1970; B.S., Columbia, 1972; M.S., 1975

MARLENE KLYVERT. *Associate Professor of Clinical Dentistry*
A.A.S., New York Community College, 1952; B.S., Columbia, 1971; M.S., 1972; M.Ed., Columbia, 1977; Ed.D., 1980

NANCY J. McVAY. *Assistant Professor of Dentistry*
B.S., Loma Linda, 1973; M.S., Columbia, 1977

JOHANNA ODRICH. *Assistant Professor of Clinical Dentistry*
B.S., Columbia, 1957; M.S., 1975; M.P.H., Columbia, 1980

RONALD B. ODRICH. *Adjunct Assistant Professor of Dentistry*
B.S., Queens (N.Y.), 1958; D.D.S., Columbia, 1959

DONA E. WAYMAN. *Associate Professor of Dentistry*
R.D.H., West Liberty State, 1951; B.S., Columbia, 1971; M.S., 1972; M.A., Columbia, 1976; Ed.D., 1978

Endodontics

DIRECTOR: Professor Irving J. Naidorf

ROBERT L. AMBINDER. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1955; D.D.S., New York University, 1961

GERALD H. BESEN. *Associate Clinical Professor of Dentistry*
D.D.S., Minnesota, 1947

DORY CALEV. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1971; D.D.S., Columbia, 1976

WINSTON WEN-JONG CHEN. *Assistant Clinical Professor of Dentistry*
D.D.S., National Taiwan University, 1966; Ph.D., Minnesota, 1974; D.D.S., 1974

GERALD M. DREW. *Assistant Clinical Professor of Dentistry*
B.A., Pennsylvania, 1944; D.D.S., Michigan, 1948

MARVIN FIRDMAN. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1948; D.D.S., Columbia, 1952

IRVING L. FRIED. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1951; M.A., 1953; D.D.S., New York University, 1957

FREDRIC E. GOODMAN. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1962

BENJAMIN B. GOULD. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1938

EDWARD GREENFIELD. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., New York University, 1957

SYNGCUK KIM. *Assistant Professor of Dentistry*
B.A., Columbia, 1972; D.D.S., 1976

JOSEPH M. LEAVITT. *Clinical Professor of Dentistry*
B.S., Oklahoma, 1936; D.D.S., Columbia, 1940

JACK LEVI. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1960; D.D.S., New York University, 1966

MICHAEL D. LUND. *Assistant Clinical Professor of Dentistry*
D.D.S., Minnesota, 1969; M.S.D., University of Washington, 1975

S. ABEL MOREINIS. *Professor of Clinical Dentistry*
D.D.S., Michigan, 1948

IRVING J. NAIDORF. *Professor of Clinical Dentistry*
B.A., New York University, 1937; D.D.S., Columbia, 1941

ROHIT PATEL. *Assistant Clinical Professor of Dentistry*
D.G., Bombay (India), 1969; D.D.S., 1973

THOMAS W. PORTWAY. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1950; D.D.S., Columbia, 1956

FRED ROTHENBERG. *Clinical Professor of Dentistry*
D.M.D., Goettingen, 1935; D.D.S., Pennsylvania, 1937

JEFFREY S. SENZER. *Assistant Clinical Professor of Dentistry*
B.A., Hunter, 1964; M.A., Brooklyn, 1967; D.D.S., Columbia, 1973

CHARLES S. SOLOMON. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

HOWARD B. VOGEL. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1950

BRIAN WEBBER. *Assistant Clinical Professor of Dentistry*
B.S., City College, 1973; D.D.S., Columbia, 1977

At St. Luke's Hospital

STANLEY B. CHESTNER. *Assistant Clinical Professor of Dentistry*
B.A., Wesleyan, 1943; D.D.S., Pennsylvania, 1946

Operative Dentistry

DIRECTOR: Professor Edward A. Cain, Jr.

ROY BOELSTLER. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1956; D.D.S., 1959

ALVIN T. BOYD. *Assistant Clinical Professor of Dentistry*
B.A., Lafayette, 1967; D.M.D., Pennsylvania, 1971

STANISLAW H. BRZUSTOWICZ. *Professor of Clinical Dentistry*
B.S., St. John's, 1940; D.D.S., Columbia, 1943

EDWARD A. CAIN, JR. *James Winston Benfield Professor of Dentistry*
B.S., Fordham, 1942; D.D.S., Columbia, 1945

PANDELIS CAMESAS. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1949; D.D.S., Columbia, 1953

KENNETH C. DEESEN. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1948

HERBERT P. FRITZ. *Associate Clinical Professor of Dentistry*
B.S., New York University, 1933; D.D.S., Columbia, 1936

RICHARD A. GREENBERG. *Assistant Clinical Professor of Dentistry*
B.A., Vermont, 1963; D.D.S., Columbia, 1968

WALTER A. GUTSTEIN. *Assistant Clinical Professor of Dentistry*
B.A., Knox, 1954; D.D.S., Columbia, 1958

WESLEY HALPERT. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., Columbia, 1946

RICHARD M. LICHTENTHAL. *Assistant Clinical Professor of Dentistry*
B.S., Muhlenberg, 1958; D.D.S., Columbia, 1962

FRANK L. MELLANA. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1956; D.D.S., Columbia, 1962

FRANK W. PANDOLFO. *Associate Clinical Professor of Dentistry*
B.S., Queens (N.Y.), 1962; D.D.S., Columbia, 1966

JOSEPH A. PIANPIANO. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1958; D.D.S., Columbia, 1962

GEORGE RUDENSKY. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1958

STANLEY R. SADLES. *Assistant Clinical Professor of Dentistry*
B.S., Columbia, 1949; D.D.S., 1953

ROGER P. SANTISE. *Assistant Clinical Professor of Dentistry*
B.S., Manhattan, 1966; D.D.S., Columbia, 1970

STEVEN S. SCRIVANI. *Professor of Clinical Dentistry*
D.D.S., Columbia, 1948

WILLIAM H. SILVERSTEIN. *Associate Clinical Professor of Dentistry*
D.D.S., Maryland, 1937

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SOLOMON A. ELLISON. *Professor of Dentistry (in Microbiology)*

B.S., College of the City of New York, 1942; D.D.S., Columbia, 1946; Ph.D. 1958

NORMAN KAHN. *Associate Professor of Pharmacology and of Dentistry*

B.A., Columbia, 1954; D.D.S., 1958; Ph.D., 1964

KLAUDIUSZ R. WEISS. *Assistant Professor of Anatomy and Psychiatry (in Dentistry)*

Ph.D., State University of New York (Stony Brook), 1973

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HAROLD D. BAURMASH. *Clinical Professor of Dentistry*

D.D.S., Columbia, 1948

ANDREW BLITZER. *Assistant Professor of Dentistry and of Otolaryngology*

B.A., Adelphi, 1966; D.D.S., Columbia, 1970; M.D., Mt. Sinai (New York), 1973

KOURKEN A. DAGLIAN. *Associate Clinical Professor of Dentistry*

B.S., College of the City of New York, 1941; D.D.S., Columbia, 1943

ANTHONY L. DI MANGO. *Associate Clinical Professor of Dentistry*

D.D.S., Georgetown, 1953

STEVEN J. GOLDBERG. *Assistant Clinical Professor of Dentistry*

B.A., State University of New York (Binghamton), 1966; D.D.S., Columbia, 1971

IAN Y. HU. *Assistant Clinical Professor of Dentistry*

D.D.S., Columbia, 1954

MARK H. JAFFE. *Assistant Clinical Professor of Dentistry*

B.S., College of the City of New York, 1969; D.D.S., Columbia, 1973

BERTRAM KLATSKIN. *Clinical Professor of Dentistry*

B.A., Cornell, 1937; D.D.S., Columbia, 1941

LOUIS J. LOSCALZO. *Clinical Professor of Dentistry*

B.A., Fordham, 1942; D.D.S., Temple, 1946

LOUIS MANDEL. *Clinical Professor of Dentistry*

B.A., New York University, 1943; D.D.S., Columbia, 1946

ROBERT G. MARCOTULLIO. *Assistant Clinical Professor of Dentistry*

B.S., Boston College, 1960; D.D.S., Columbia, 1964

GEORGE A. MINERVINI. *Clinical Professor of Dentistry*

B.A., Columbia, 1942; D.D.S., 1946

HERBERT RABINOWITZ. *Assistant Clinical Professor of Dentistry*

D.D.S., Pittsburgh, 1943

PAUL N. ROGOW. *Assistant Clinical Professor of Dentistry*

D.D.S., Columbia, 1971

STEVEN M. ROSER. *Associate Professor of Clinical Dentistry*

B.A., Middlebury, 1964; D.M.D., Harvard, 1968; M.D., 1972

DANIEL D. SCHUBE. *Associate Clinical Professor of Dentistry*
B.A., Brooklyn, 1945; D.D.S., New York University, 1949

BOAZ M. SHATTAN. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1949; D.D.S., 1943

ALVIN L. SOLOMON. *Assistant Clinical Professor of Dentistry*
D.D.S., Georgetown, 1948

MORTON JAY STERN. *Associate Clinical Professor of Dentistry*
B.A., Upsala, 1949; D.D.S., Temple, 1953

BERTRAM J. WEISSMAN. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1944; D.D.S., Columbia, 1946

At Harlem Hospital

J. HAMIL WILLOUGHBY. *Assistant Professor of Clinical Dentistry*
B.S., City College, 1962; D.D.S., Howard, 1966

At Roosevelt Hospital

EDWARD B. ARMSTRONG. *Associate Clinical Professor of Dentistry*
B.A., Pennsylvania, 1950; D.D.S., New York University, 1954

GERALD E. LEDERMAN. *Assistant Clinical Professor of Dentistry*
B.S., Columbia, 1960; D.D.S., 1964

ANDREW M. LINZ. *Professor of Clinical Dentistry*
D.D.S., Pennsylvania, 1948; M.Sc. (Dent.), 1953

At St. Luke's Hospital

JEROME T. FRIEDMAN. *Professor of Clinical Dentistry*
B.A., Miami University (Ohio), 1956; D.D.S., Ohio State, 1961

JAY P. GOLDSMITH. *Assistant Clinical Professor of Dentistry*
B.S., Lafayette, 1962; D.M.D., Pennsylvania, 1966

DAVID M. KRITCHMAN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1966; D.D.S., Columbia, 1970

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D.M.D., University of the East (Philippines), 1962

SIDNEY L. HOROWITZ. *Professor of Dentistry*
B.S., Columbia, 1942; D.D.S., New York University, 1945

MARLENE KLYVERT. *Associate Professor of Clinical Dentistry*
B.S., Columbia, 1971; M.S., 1972; M.Ed., 1977; Ed.D., 1980

MELVIN L. MOSS. *Professor of Anatomy and of Dentistry*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

LETTY MOSS-SALENTIJN. *Associate Professor of Dentistry*
D.D.S., Utrecht, 1967; Ph.D., 1976

HERBERT P. OSTREICHER. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1943; D.D.S., 1945

THEODORE REBICH, JR. *Associate Clinical Professor of Dentistry*
B.A., Washington and Jefferson, 1966; D.M.D., Pittsburgh, 1970; Ph.D., 1974; M.P.H., 1977

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LAWRENCE W. BERGMANN. *Adjunct Assistant Professor of Dentistry*
B.A., Colgate, 1951; D.D.S., Georgetown, 1958

ABRAHAM M. BLECHMAN. *Associate Clinical Professor of Dentistry*
B.S., New York University, 1945; D.D.S., 1948

MARINO A. BRAMANTE. *Associate Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1957

THOMAS J. CANGIALOSI. *Assistant Professor of Dentistry*
D.D.S., Georgetown, 1959

NICHOLAS A. DI SALVO. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945; Ph.D., 1952

MONROE M. GLIEDMAN. *Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

RICHARD GLIEDMAN. *Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

ROBERT J. HUETTNER. *Adjunct Assistant Professor of Dentistry*
B.S., Columbia, 1949; D.D.S., Michigan, 1949; M.S., 1950

ROBERT J. ISAACSON. *Assistant Clinical Professor of Dentistry*
B.S. Rutgers, 1953; M.S., 1954; D.D.S., Columbia, 1958

GUSTAVE LASOFF. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1940; D.D.S., Medical College of Virginia, 1944

MELVYN M. LEIFERT. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1963; D.D.S., State University of New York (Buffalo), 1967

MALCOLM E. MEISTRELL, JR. *Associate Clinical Professor of Dentistry*
b.A., Princeton, 1960; D.D.S., Michigan, 1964

HENRY I. NAHOUM. *Professor of Dentistry*
B.A., Brooklyn, 1940; D.D.S., Columbia, 1943

ARMAND M. OPPENHEIMER. *Clinical Professor of Dentistry*
B.A., College of the City of New York, 1926; B.S., Columbia, 1927; D.D.S., 1929

JOSEPH P. RUISI. *Assistant Clinical Professor of Dentistry*
B.S., St. John's (N.Y.), 1972; D.D.S., Columbia, 1976

LAWRENCE R. SIEGEL. *Assistant Clinical Professor of Dentistry*
B.A., Upsala, 1963; D.D.S., Temple, 1967

MILTON SILVER. *Assistant Clinical Professor of Dentistry*
B.S., Pittsburgh, 1945; D.D.S., 1945

JULIUS D. TARSHIS. *Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1949

ISABEL T. WHITEHILL-GRAYSON. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1954; M.S., 1957; D.D.S., 1961

ALBERT N. ZENGO. *Associate Clinical Professor of Dentistry*
B.S., Tufts, 1959; D.D.S., Columbia, 1964

Section of Special Dental Services

JOSEPH LUBAN. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., Columbia, 1942

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B.A., Yeshiva, 1957; D.D.A., New York University, 1961

RALPH L. BERK. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1968; D.D.S., Columbia, 1976

ELENA BILIK. *Assistant Clinical Professor of Dentistry*
D.D.S., Buenos Aires, 1965

DONALD F. COHEN. *Assistant Clinical Professor of Dentistry*
B.A., Hunter, 1966; D.M.D., Pennsylvania, 1970

MARK S. COHEN. *Assistant Clinical Professor of Dentistry*
B.S., City College, 1971; D.D.S., Columbia, 1975

MARTIN J. DAVIS. *Assistant Professor of Dentistry*
B.A., Yale, 1970; D.D.S., Columbia, 1974

HOWARD D. DIMOND, JR. *Assistant Clinical Professor of Dentistry*
B.A., University of Pennsylvania, 1971; D.M.D., 1975

ROBERT I. FRIEDER. *Assistant Clinical Professor of Dentistry*
B.S., Kent State, 1951; D.D.S., New York University, 1954

DAVID N. GALE. *Assistant Clinical Professor of Dentistry*
B.A., Brandeis, 1974; D.M.D., Tufts, 1978

MARY L. GEORGE. *Assistant Professor of Dentistry*
B.A., Manhattanville, 1970; M.A., Vanderbilt, 1971; D.M.D., Boston, 1977

STEVEN P. HACKMYER. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1978

NEAL HAMMER. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1976

LOIS A. JACKSON. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1973; D.D.S., 1977

MARVIN B. KING. *Associate Clinical Professor of Dentistry*
D.D.S., New York University, 1954

GEORGE C. KIRIAKOPOULOS. *Associate Clinical Professor of Dentistry*
B.A., Brooklyn, 1950; D.D.S., Columbia, 1954

SEYMOUR KOSTER. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949

ROBERT A. KOWEEK. *Assistant Clinical Professor of Dentistry*
B.A., Rochester, 1965; D.M.D., Tufts, 1968

JOSEPH M. McMANUS, JR. *Assistant Clinical Professor of Dentistry*
B.A., Holy Cross, 1968; D.M.D., Pennsylvania, 1972

GUY D. METCALF. *Assistant Clinical Professor of Dentistry*
B.A., Clark, 1970; D.D.S., Columbia, 1975

ALFRED J. MEZZA. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1959; D.D.S., Fairleigh Dickinson, 1963

BERNARD M. RIKLIN. *Associate Clinical Professor of Dentistry*
B.A., Illinois, 1943; D.D.S., 1944

ARNOLD ROSENBERG. *Clinical Professor of Dentistry*
B.S., New York University, 1943; D.D.S., 1945

MICHAEL D. SWITKES. *Assistant Clinical Professor of Dentistry*
B.S., Dickinson (Pennsylvania), 1975; D.D.S., Columbia, 1979

At Roosevelt Hospital

LILLIAN H. BACHMAN. *Assistant Clinical Professor of Dentistry*
B.S., Queens, 1959; D.D.S., Columbia, 1963; M.A., 1967

Periodontics

DIRECTOR: Professor Robert Gottsegen.

VINCENT J. ABBATIELLO. *Assistant Clinical Professor of Dentistry*
B.A., Cornell, 1966; D.M.D., Harvard, 1970

BARRY L. BEHRENS. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn College of Pharmacy, 1965; D.D.S., Medical College of Virginia, 1969

FRANK E. BEUBE. *Clinical Professor of Dentistry*
L.D.S., D.D.S., Toronto, 1930

ALVIN D. CEDERBAUM. *Associate Clinical Professor of Dentistry*
D.M.D., Tufts, 1939

DANIEL H. FINE. *Associate Professor of Dentistry*
B.S., Queens (N.Y.), 1962; D.M.D., Pennsylvania, 1965

ALLAN J. FORMICOLA. *Professor of Dentistry*
D.D.S., Georgetown, 1963; M.S., 1965

ARNOLD M. GEIGER. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1938; D.D.S., Pennsylvania, 1941

STEVEN I. GOLD. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1966

STEPHEN F. GOODMAN. *Associate Clinical Professor of Dentistry*
B.A., Colgate, 1955; D.D.S., Pennsylvania, 1960

ROBERT GOTTSEGEN. *Professor of Dentistry*
B.A., Michigan, 1939; D.D.S., Columbia, 1943

NASSER G. J. HABEEB. *Assistant Clinical Professor of Dentistry*
B.A., Fordham, 1969; D.D.S., Columbia, 1975

RAYMOND F. JOHNSON, JR. *Associate Clinical Professor of Dentistry*
D.D.S., Pennsylvania, 1952

PAUL R. KAMEN. *Assistant Professor of Dentistry*
B.A., State University of New York (Stony Brook), 1968; D.D.S., Columbia, 1975

IRVING A. KAREL. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1956

JOEL S. KLEIMAN. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1968; D.D.S., Columbia, 1971

MARC C. LEVINE. *Assistant Clinical Professor of Dentistry*
B.S., Cornell, 1971; D.D.S., New York University, 1975

ALAN LUBARR. *Assistant Clinical Professor of Dentistry*
B.A., Yeshiva, 1964; D.M.D., Pennsylvania, 1968

DOUGLAS L. MARION. *Assistant Clinical Professor of Dentistry*
B.A., Susquehanna, 1970; D.D.S., Georgetown, 1974

MELVIN L. MORRIS. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1934; M.A., Columbia, 1937; D.D.S., 1941

BERNARD S. MOSKOW. *Clinical Professor of Dentistry*
D.D.S., Temple, 1954; M.Sc.D., Pennsylvania, 1958

VIRGINIA KLUTE MURRAY. *Assistant Clinical Professor of Dentistry*
D.M.D., Fairleigh Dickinson, 1971

HARVEY S. NISSELSOHN. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1968; D.D.S., Columbia, 1972

MICHAEL B. SAVIN. *Assistant Clinical Professor of Dentistry*
B.A., Rochester, 1961; D.M.D., Pennsylvania, 1965

MURRAY SCHWARTZ. *Clinical Professor of Dentistry*
B.A., New York University, 1950; D.D.S., Columbia, 1953

STEPHEN SILSTON. *Assistant Clinical Professor of Dentistry*
B.S., Indiana, 1968; D.D.S., 1971; M.Sc.D., Boston, 1973

STEPHEN D. STEIN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1962; D.D.S., 1966

PAUL J. TANNENBAUM. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1957; D.D.S., Columbia, 1961

LESLIE Z. TAYNOR. *Assistant Clinical Professor of Dentistry*
B.A., Queens (N.Y.), 1968; D.D.S., New York University, 1975

MARIO A. VILARDI. *Assistant Clinical Professor of Dentistry*
D.M.D., Pennsylvania, 1974

BERNARD H. WASSERMAN. *Clinical Professor of Dentistry*
B.A., Brooklyn, 1941; D.D.S., Columbia, 1944

ALAN A. WINTER. *Assistant Clinical Professor of Dentistry*
B.A., Rutgers, 1969; D.D.S., New York University, 1973

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D.D.S., Michigan, 1971

ROBERT S. BREAKSTONE. *Assistant Clinical Professor of Dentistry*
D.D.S., New York University, 1945

ROBERT S. GOLDMAN. *Associate Clinical Professor of Dentistry*
B.A., Temple, 1963; D.M.D., Pittsburgh, 1968

JAMES N. HARBO. *Assistant Clinical Professor of Dentistry*
D.D.S., Michigan, 1968

STANLEY HELLER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., New York University, 1949; M.A., Columbia, 1950

D. HAROLD LINN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1942; D.D.S., 1945

IRWIN D. MANDEL. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945

BRIAN L. G. MORGAN. *Assistant Professor of Dentistry (in the Institute of Human Nutrition)*
B.Sc., London, 1971; M.Sc., 1972; Ph.D., 1975

HERBERT I. OSHRAIN. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., New York University, 1942

JAY ROTHSCHILD. *Assistant Clinical Professor of Dentistry*
B.A., Yeshiva, 1957; D.D.S., New York University, 1961

ARTHUR SHAIN. *Associate Clinical Professor of Dentistry*
B.S., New York University, 1935; D.D.S., Dalhousie, 1939; M.P.H., Columbia, 1974

ROBERT N. STUCHELL. *Assistant Professor of Dentistry*
B.S., California State, 1965; D.M.D., Pittsburgh, 1972

Prosthodontics

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SHELDON ABBOTT. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1948; D.D.S., Pennsylvania, 1952

JACOB ABELSON. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1941; D.D.S., Columbia, 1945

DANIEL SILVIO BUDASOFF. *Assistant Clinical Professor of Dentistry*
B.S., Florida, 1973; D.D.S., Columbia, 1978

VICTOR S. CARONIA. *Professor of Dentistry*
D.D.S., Columbia, 1957

EDWARD J. CHARPENTIER. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1961; D.D.S., Columbia, 1973

THOMAS J. CLEARY. *Assistant Clinical Professor of Dentistry*
B.S., Georgetown, 1965; D.D.S., Columbia, 1970

GERARD L. COURTADE. *Adjunct Professor of Dentistry*
B.A., Columbia, 1937; D.D.S., 1940

ANTHONY J. CURINGA. *Assistant Clinical Professor of Dentistry*
B.S., St. Francis, 1962; D.D.S., Columbia, 1966

JOSEPH A. DE JULIA. *Associate Clinical Professor of Dentistry*
B.S., Pittsburgh, 1951; D.D.S., Columbia, 1962

GUSTAV T. DURRER. *Associate Clinical Professor of Dentistry*
Dr. Med. Dent., Berne, 1937; D.D.S., Pennsylvania, 1940

DANIEL D. EPSTEIN. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1953; D.D.S., 1956

JOEL GOLDIN. *Associate Clinical Professor of Dentistry*
B.A., Amherst, 1959; D.M.D., Harvard, 1963

IRVING GOLOMBECK. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1969; D.D.S., Columbia, 1973

ALVIN J. GRAYSON. *Associate Clinical Professor of Dentistry*
D.D.S., Indiana, 1952

ROBERT E. HERLANDS. *Adjunct Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944

GEORGE W. HINDELS. *Adjunct Professor of Dentistry*
M.D., Vienna, 1938; D.D.S., Columbia, 1943

ALFRED HOLZMAN. *Associate Clinical Professor of Dentistry*
D.D.S., Michigan, 1927

H. KENNETH JACKIER. *Assistant Clinical Professor of Dentistry*
B.S., Dickinson, 1962; D.M.D., Pennsylvania, 1966

ARNOLD S. JUTKOWITZ. *Assistant Clinical Professor of Dentistry*
D.M.D., Pennsylvania, 1966

STANLEY L. KENT. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., Iowa, 1942; D.D.S., Columbia, 1943

BERTHOLD KUERER. *Assistant Clinical Professor of Dentistry*
B.A., Hunter, 1950; D.D.S., Columbia, 1955

ALBERT J. KURPIS. *Assistant Clinical Professor of Dentistry*
B.A., Adelphi, 1970; D.D.S., Columbia, 1974

JOEL M. LEON. *Assistant Clinical Professor of Dentistry*
B.A., Syracuse, 1965; D.D.S., New York University, 1969

JOHN J. LUCCA. *Professor of Dentistry*
B.A., New York University, 1941; D.D.S., Columbia, 1947

GILBERT G. MAZUR. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1950; M.A., California (Berkeley), 1951; D.M.D., Louisville, 1955

WILLIAM J. MILLER. *Adjunct Professor of Dentistry*
B.A., New York University, 1940; D.D.S., Columbia, 1943

ROBERT D. MINER. *Associate Clinical Professor of Dentistry*
B.S., Denison, 1962; D.D.S., Columbia, 1967

DENNIS N. MOREA. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1966; D.D.S., Columbia, 1970

RALPH K. NEUHAUS. *Associate Clinical Professor of Dentistry*
B.S., Moravian, 1961; D.D.S., Columbia, 1965

JOHN D. PIRO. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1946

JOSEPH A. RANDI. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1953

ALAN T. ROSENBLOOM. *Assistant Clinical Professor of Dentistry*
B.S., Maryland, 1969; D.D.S., 1972

MARC A. ROSENBLUM. *Assistant Professor of Dentistry*
B.S., B.A., Rutgers, 1966; Ph.D., 1971; D.M.D., College of Medicine and Dentistry of New Jersey, 1979

LOUIS I. RUBINS. *Associate Clinical Professor of Dentistry*
B.S., Queens (New York), 1956; D.D.S., Columbia, 1960

JOHN M. SCAROLA. *Associate Clinical Professor of Dentistry*
B.S., Fordham, 1956; D.D.S., Columbia, 1960

DAVID L. SCHWARTZ. *Assistant Clinical Professor of Dentistry*
B.S., Rutgers, 1952; D.D.S., Pennsylvania, 1956; M.S., New York University, 1967

VICTOR I. SENDAX. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1951; D.D.S., 1955

HARRY SHPUNTOFF. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943

MARK A. TEPPER. *Assistant Professor of Dentistry*
B.S., Columbia, 1972; M.S., 1974; D.D.S., 1978; M.D.S., Pittsburgh, 1980

DANTE M. TORRESE. *Assistant Clinical Professor of Dentistry*
B.S., Manhattan, 1971; D.D.S., Columbia, 1975

ENNIO L. UCCELLANI. *Professor of Dentistry*
B.S., College of the City of New York, 1946; D.D.S., Columbia, 1948

NICHOLAS A. VERO, JR. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1972

MAXWELL WIDROW. *Associate Clinical Professor of Dentistry*
D.D.S., Temple, 1940

THOMAS A. WILSON. *Assistant Clinical Professor of Dentistry*
B.S., Fairleigh Dickinson, 1964; D.D.S., Columbia, 1968

JEROME A. ZANE. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1943

At St. Luke's Hospital

MARC H. LORINSKY. *Assistant Clinical Professor of Dentistry*
D.M.D., Tufts, 1966

Section of Special Dental Services

SEBASTIAN A. BRUNO. *Adjunct Professor of Dentistry*
D.M.D., Tufts, 1948

EUGENE P. LASOTA. *Associate Clinical Professor of Dentistry*
B.A., Hofstra, 1957; D.D.S., Columbia, 1961

Stomatology

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MARTIN I. AMES. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949

JACK BUDOWSKY. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1943

JOHN F. CAPRICCIO. *Assistant Clinical Professor of Dentistry*
D.D.S., Georgetown, 1970

ROBERT E. CROWLEY. *Clinical Professor of Dentistry*
B.A., New York University, 1935; D.D.S., 1939

HAROLD DARWIN. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939

JOHN V. DONOVAN. *Assistant Clinical Professor of Dentistry*
B.S., Wagner, 1963; D.D.S., Columbia, 1967

SUSAN A. FRIEDMAN. *Assistant Clinical Professor of Dentistry*
B.S., City College, 1970; D.D.S., Pennsylvania, 1973

ROBERT GABRIELE. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1970

EDGAR GATTEGNO. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1942; D.D.S., Columbia, 1945

CHARLES W. GOLDFARB. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., New York University, 1943

DAVID I. HENDELL. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., Columbia, 1959

SIDNEY I. HURWITZ. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1933; D.D.S., New York University, 1939

HYMAN ISRAEL. *Assistant Clinical Professor of Dentistry*
B.S., Western Reserve, 1942; D.D.S., 1943; M.P.H., Harvard, 1949

FRANCES R. KARLAN. *Associate Clinical Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1942; D.D.S., Columbia, 1949; M.B.A., Fordham, 1972

MORTIMER KARMIOL. *Clinical Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943

JOHN K. LIND. *Clinical Professor of Dentistry*
B.S., St. John's, 1951; D.D.S., Columbia, 1957

ANDREI M. MARCU. *Assistant Clinical Professor of Dentistry*
M.D., D.D.S., Medico-Pharmacy Institute (Bucharest), 1960

LAWRENCE MARDER. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1949; D.D.S., Columbia, 1954

MICHAEL Z. MARDER. *Clinical Professor of Dentistry*
D.D.S., Columbia, 1963

HARRY H. SCHAEFER. *Assistant Clinical Professor of Dentistry*
B.S., Northwestern, 1942; D.D.S., 1942; D.D.S., New York University, 1943

ROBERT N. SCHIFF. *Associate Clinical Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

MORTON R. SCHOENBERG. *Assistant Clinical Professor of Dentistry*
B.A., Brooklyn, 1954; D.D.S., Columbia, 1962

IRVING C. STOWER. *Assistant Clinical Professor of Dentistry*
B.S., College of the City of New York, 1935; D.D.S., Columbia, 1938

ROBERT TAUBER. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1958; D.D.S., 1962

DAVID J. ZEGARELLI. *Associate Professor of Dentistry (in Pathology)*
B.A., Columbia, 1965; D.D.S., 1969

Psychiatric Dental Service

DIRECTOR: Professor Austin H. Kutscher

HERBERT D. AYERS. *Clinical Professor of Dentistry*
B.A., Columbia, 1929; D.D.S., 1931

WILLIAM C. BARAL. *Assistant Clinical Professor of Dentistry*
B.S., Columbia, 1950; D.D.S., 1953

MARTIN BASSIUR. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1964; D.D.S., 1968

DANIEL J. CHERICO. *Assistant Clinical Professor of Dentistry*
B.A., St. Joseph's Seminary, 1968; Ph.D., Indiana, 1973

JOSEPH C. DELISI. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1952

NATHAN FLEISCHER. *Assistant Clinical Professor of Dentistry*
Ph.D., Yeshiva, 1967

STEPHEN VITON GULLO. *Assistant Clinical Professor of Dentistry*
Ph.D., Columbia, 1974

BERNARD GURIAN. *Assistant Clinical Professor of Dentistry*
B.S., Illinois, 1937; D.D.S., 1939

ELLEN N. HOSIOSKY. *Associate Clinical Professor of Dentistry*
D.M.D., Basle, 1935; D.H., Guggenheim Dental Clinic, 1939; D.D.S., Columbia, 1947

AUSTIN H. KUTSCHER. *Associate Professor of Dentistry*
B.S., New York University, 1945; D.D.S., Columbia, 1946

Section of Special Dental Services

JEROME BARTWINK. *Assistant Clinical Professor of Dentistry*
D.M.D., Tufts, 1948

JAMES A. LIPTON. *Assistant Clinical Professor of Dentistry*
B.S., City College, 1967; D.D.S., Columbia, 1971

PAMELA B. LUND. *Assistant Clinical Professor of Dentistry*
B.A., St. Olaf (Minnesota), 1967; M.A., Minnesota, 1969

JOSEPH J. MARBACH. *Clinical Professor of Dentistry*
B.A., Drew, 1956; D.D.S., Pennsylvania, 1960

FRANK P. PETRONELLA. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1970

JOHN R. VAROSCAK. *Assistant Clinical Professor of Dentistry*
B.S., Fairleigh Dickinson, 1966; D.D.S., 1969

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B.A., Amherst, 1962; M.D., Columbia, 1966

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B.Ch.E., Manhattan, 1968; S.M., Massachusetts Institute of Technology, 1969; M.D., State University of New York (Downstate), 1973

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B.A., Princeton, 1968; M.D., Cornell, 1972

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B.A., Vanderbilt, 1960; M.D., Washington (St. Louis), 1964
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B.A., Hamilton, 1969; M.D., Columbia, 1973
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B.A., Notre Dame, 1954; M.D., Columbia, 1955
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B.A., Yale, 1961; M.D., Virginia, 1971
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B.A., Columbia, 1967; M.D., 1971
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B.A., Columbia, 1968; M.D., 1972
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B.A., Harvard, 1967; M.D., Columbia, 1971
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M.D., Sydney, 1971
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B.A., Haverford, 1950; M.D., 1957
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B.A., New York University, 1966; M.D., Harvard, 1970

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B.S., Long Island, 1949; M.S., Southern California, 1952; Ph.D., Maryland, 1956
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B.A., Amherst, 1961; M.A., 1963; Ph.D., Rockefeller, 1967
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B.S., College of the City of New York, 1943; M.A., New York University, 1949; Ph.D., Columbia, 1951
- HAROLD S. GINSBERG. *John E. Borne Professor of Microbiology*
B.A., Duke, 1937; M.D., Tulane, 1941
- RAMAREDDY V. GUNTAKA. *Assistant Professor of Microbiology*
B.S., Andhra (India), 1963; M.Sc., Agra (India), 1965; Ph.D., Kansas, 1970
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A.B., Princeton, 1963; M.D., Harvard, 1969

ELVIN A. KABAT. *Professor of Microbiology and Human Genetics and Development*
B.S., College of the City of New York, 1932; M.A., Columbia, 1934; Ph.D., 1937

WLADISLAW MANSKI. *Professor of Microbiology*
M. Phil., Warsaw, 1939; D.Sc., Wroclaw, 1951

CHRISTINE A. MILCAREK. *Assistant Professor of Microbiology*
B.A., Duquesne, 1968; Ph.D., Johns Hopkins, 1972

COUNCILMAN MORGAN. *Professor of Microbiology*
B.S., Harvard, 1943; M.D., Columbia, 1946

SHERIE L. MORRISON. *Assistant Professor of Microbiology*
B.A., Stanford, 1963; Ph.D., 1966

BENVENUTO PERNIS. *Professor of Microbiology and Immunology*
M.D., Milan (Italy), 1947

AUGUS C. SAMPATH. *Associate Clinical Professor of Pathology in Microbiology*
D.Sc., Strasbourg, 1966

AZRA SHAHIDI. *Adjunct Assistant Professor of Microbiology*
M.S., Wisconsin, 1963; Ph.D., Missouri, 1967

SAUL J. SILVERSTEIN. *Associate Professor of Microbiology*
B.S., Cornell, 1968; Ph.D., Florida, 1971

CHARLES S. H. YOUNG. *Assistant Professor of Microbiology*
B.A., Oxford, 1966; D. Phil., 1969

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B.A., Wesleyan, 1957; M.D., Union (Albany), 1961

ANDREW BLITZER. *Assistant Professor of Otolaryngology (also Dentistry)*
B.A., Adelphi, 1966; D.D.S., Columbia, 1970; M.D., Mt. Sinai (New York), 1973

JOHN D. PIRO. *Assistant Clinical Professor of Otolaryngology and Assistant Clinical Professor of Dentistry*
B.A., Fordham, 1943; D.D.S., Columbia, 1946

ROBIN M. RANKOW. *Professor of Clinical Otolaryngology*
B.S., College of the City of New York, 1935; D.D.S., Columbia, 1940; M.D., Rochester, 1950

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B.A., New York University, 1951; M.D., State University of New York, 1955

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D.D.S., New York University, 1955

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- CECILIA FENOGLIO. *Associate Professor of Pathology*
B.S., St. Elizabeth, 1956; M.D., Georgetown, 1969
- JOHN J. FENOGLIO. *Associate Professor of Pathology*
B.S., Harvard, 1965; M.D., Georgetown, 1969
- S. RAYMOND GAMBINO. *Professor of Pathology*
B.S., Antioch, 1948; M.D., Rochester, 1952
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B.A., Cornell, 1947; M.A., Michigan State, 1948; Ph.D., New York University, 1953
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M.D., Bucharest, 1949
- AUSTIN D. JOHNSON. *Professor of Clinical Pathology (assigned to Orthopedic Surgery)*
B.A., Columbia, 1945; M.D., 1947
- DONALD WEST KING. *Francis Delafield Professor of Pathology*
M.D., Syracuse, 1949
- DANIEL M. KNOWLES. *Assistant Professor of Pathology*
B.A., Bridgeport, 1969; M.D., Chicago, 1973
- RAFFAELE LATTES. *Professor Emeritus of Surgical Pathology*
M.D., University of Turino (Italy), 1933
- JAY H. LEFKOWITCH. *Assistant Professor of Pathology*
B.A., Clark, 1972; M.D., Columbia, 1976
- RICARDO MESA-TEJADA. *Assistant Professor of Pathology*
B.S., Manhattan, 1964; M.D., Madrid, 1970
- CLAYTON NATTA. *Assistant Professor of Medicine and Pathology*
M.D., Toronto, 1961
- ROBERT R. PASCAL. *Clinical Professor of Pathology*
B.A., Columbia, 1958; M.D., 1962
- KARL H. PERZIN. *Associate Professor of Clinical Surgical Pathology*
B.A., Columbia, 1954; M.D., 1958
- CONRAD L. PIRANI. *Professor of Pathology*
M.D., Milan, 1938
- RALPH M. RICHART. *Professor of Pathology (assigned to Obstetrics and Gynecology)*
B.A., Johns Hopkins, 1954; M.D., Rochester, 1958
- MARIA M. SHEVCHUK. *Assistant Professor of Clinical Pathology*
B.A., Fordham, 1970; M.D., Syracuse, 1974
- DAVID N. SILVERS. *Associate Clinical Professor of Dermatology and Pathology*
B.A., Haverford, 1964; M.D., Duke, 1968
- SHELDON C. SOMMERS. *Clinical Professor of Pathology*
M.D., Harvard, 1941
- BERNARD M. WAGNER. *Clinical Professor of Pathology*
M.D., Hahnemann, 1949

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B.A., Pennsylvania, 1949; M.D., State University of New York (Downstate), 1956; M.S.,
Columbia, 1963

MYRON WINICK. *Robert R. Williams Professor of Nutrition and Director of the Institute of
Human Nutrition*
B.A., Columbia, 1951; M.S., Illinois, 1952; M.D., State University of New York (Downstate),
1956

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B.A., Emory, 1955; M.D., Georgia, 1960

KENNETH E. EAKINS. *Professor of Pharmacology (in Ophthalmology)*
Ph.D., London, 1962

LOWELL M. GREENBAUM. *Professor of Pharmacology*
B.S., College of the City of New York, 1949; Ph.D., Tufts, 1953

BRIAN F. HOFFMAN. *David Hosack Professor of Pharmacology*
B.A., Princeton, 1943; M.D., Long Island, 1947

FREDERICK G. HOFMANN. *Professor of Pharmacology*
B.A., Michigan, 1943; Ph.D., Harvard, 1952

NORMAN KAHN. *Associate Professor of Pharmacology and of Dentistry*
B.A., Columbia, 1954; D.D.S., 1958; Ph.D., 1964



EDWARD B. KIRSTEN. *Adjunct Assistant Professor of Pharmacology*
B.S., Fairleigh Dickinson, 1962; M.S., New York University, 1966; M.A., Hunter, 1969;
Ph.D., City University of New York, 1969

HAROLD C. NEU. *Professor of Medicine and of Pharmacology*
B.A., Creighton, 1956; M.D., Johns Hopkins, 1960

SHIH-HSUN NGAI. *Professor of Anesthesiology and of Pharmacology*
M.B., National Central (Nanking), 1944

MICHAEL R. ROSEN. *Associate Professor of Pharmacology*
B.A., Wesleyan, 1960; M.D., State University of New York, Downstate Medical Center,
1964

WILBUR H. SAWYER. *Professor of Pharmacology*
B.A., Harvard, 1942; M.D., 1945; Ph.D., 1950

LANCE L. SIMPSON. *Associate Professor of Pharmacology*
B.A., Vanderbilt, 1966; Ph.D., California (Berkeley), 1969

HSUEH-HWA WANG. *Associate Professor of Pharmacology*
M.D., National Central University Medical School (China), 1946

SHIH-CHUN WANG. *Gustavus and Louise Pfeiffer Professor of Pharmacology*
B.S., Yenching, 1931; M.D., Peiping Union Medical College (China), 1935; Ph.D., Northwest-
ern, 1940

ANDREW L. WIT. *Associate Professor of Pharmacology*
B.S., Bates, 1963; Ph.D., Columbia, 1968

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CHAIRMAN: Professor John V. Taggart

MARTIN BLANK. *Associate Professor of Physiology*
B.S., College of the City of New York, 1954; Ph.D., Columbia, 1957; Ph.D., Cambridge,
1959

SHU CHIEN. *Professor of Physiology*
M.B., National Taiwan, 1954; Ph.D., Columbia, 1957

RAIMOND EMMERS. *Associate Professor of Physiology*
B.A., East Texas Baptist, 1953; M.A., North Carolina, 1955; Ph.D., Syracuse, 1958

MICHEL FERIN. *Associate Professor of Physiology (in Obstetrics and Gynecology)*
M.D., Louvain, 1964

CLAUDE P. J. GHEZ. *Associate Professor of Physiology and Neurology*
B.Sc., Geneva, 1960; M.D., Harvard, 1964

KUNG-MING JAN. *Associate Professor of Physiology*
M.B., National Taiwan, 1967; Ph.D., Columbia, 1971

ERIC R. KANDEL. *Professor of Physiology and Psychiatry*
B.A., Harvard, 1952; M.D., New York University, 1956

JOHN D. KOESTER. *Assistant Professor of Physiology*
B.A., Wooster, 1965; Ph.D., Columbia, 1971

WILLIAM L. NASTUK. *Professor of Physiology*
B.S., Rutgers, 1939; Ph.D., 1945

HUGH N. NELLANS. *Assistant Professor of Physiology (in Medicine)*
B.A., Lawrence, 1967; Ph.D., Yale, 1971

MERO R. NOCENTI. *Professor of Physiology*
B.A., West Virginia, 1951; M.S., 1952; Ph.D., Rutgers, 1955

JOHN P. REUBEN. *Professor of Physiology (in Neurology)*
B.A., Grinnell, 1954; M.S., Rochester, 1956; Ph.D., Florida, 1959

DAVID SCHACHTER. *Professor of Physiology*
B.S., New York University, 1946; M.D., 1949

JAMES H. SCHWARTZ. *Professor of Physiology*
B.A., Columbia, 1954; M.D., New York University, 1959

JOHN V. TAGGART. *John C. Dalton Professor of Physiology*
M.D., Southern California, 1940

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B.A., Columbia, 1947; M.D., 1951

FRANK S. JEWETT. *Assistant Clinical Professor of Psychiatry (in Dentistry)*
B.A., Yale, 1953; M.D., Columbia, 1957

SIDNEY MALITZ. *Professor of Clinical Psychiatry*
B.S., Tulane, 1943; M.D., Chicago, 1946

EDWARD J. SACHAR. *Professor of Psychiatry*
B.A., Harvard, 1952; M.D., Pennsylvania, 1956

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B.S., Yale, 1948; M.D., State University of New York (Downstate), 1951; M.P.H., Harvard, 1964

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B.A., Hunter, 1957; M.D., State University of New York (Downstate), 1961; M.P.H., Harvard, 1963

JOHN L. COLOMBOTOS. *Associate Professor of Sociomedical Sciences*
B.A., Columbia, 1949; M.A., 1952; Ph.D., Michigan, 1961

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B.A., Smith, 1933; M.D., Johns Hopkins, 1937; M.P.H., Columbia, 1952

JACK ELINSON. *Professor of Public Health (Sociomedical Sciences)*
B.S., College of the City of New York, 1937; M.A., George Washington, 1946; Ph.D. 1954

MORTON A. FISHER. *Adjunct Associate Professor of Public Health (Health Administration)*
B.S., Western Reserve, 1942; D.D.S., 1944; B.A., Brooklyn, 1958; M.P.H., Columbia, 1957

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B.A., Columbia, 1959; M.S., 1961; Ph.D., 1967
- HAROLD FRUCHTBAUM. *Adjunct Associate Professor of Public Health (History and Philosophy of Public Health)*
B.C.E., New York University, 1955; M.S., Rensselaer Polytechnic Institute, 1956; Ph.D., Harvard, 1964; M.A., Cambridge, 1968
- BRUCE A. VLADECK. *Associate Professor of Public Health (Health Administration) (in the Center for Community Health Systems)*
B.A., Harvard, 1970; M.A., Michigan, 1972; Ph.D., 1973
- ROBERT J. WEISS. *Joseph R. DeLamar Professor of Public Health Practice*
B.A., George Washington, 1947; M.D., Columbia, 1951; M.A. (hon.), Dartmouth, 1964
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M.D., Toronto, 1950; M.P.H., Columbia, 1960; Dr.P.H., 1961

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B.A., Columbia, 1952; M.D., 1955
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B.S., Idaho State, 1945; M.D., Pennsylvania, 1949

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 (at *St. Luke's Hospital*)
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 Enrique Lenchewski, D.D.S. (at the *Roosevelt Hospital*)
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 Elena Suditu, D.D.S.
 Edward K. Swain, Jr., D.M.D.
 (at *The Roosevelt Hospital*)

Paulette J. Temprow, D.D.S.
 Louys Thomas, M.D. (*Pathology*)
 Thomas A. Travers, D.D.S., M.P.H.
 Joseph H. Tychostup, D.D.S.
 Robert G. Veligdan, D.M.D.
 Noel N. Weekes, M.D. (*Pathology*)
 Ardell A. Wilson, D.D.S.
 Louis R. Wolf, D.M.D.
 (at *The Roosevelt Hospital*)
 Monica C. Yang, M.D. (*Pathology*)
 Neil H. Zane, D.D.S.
 Peter J. Zegarelli, D.D.S.

LECTURERS

Michael Baden, M.D. (*Pathology*)
 Charles E. Barr, D.D.S., M.S.
 Paul Brown, M.D. (*Pathology*)
 Frank V. Celenza, D.D.S., M.S.D.
 Angelo Chiarenza, D.D.S.
 Burney M. Croll, D.D.S.
 Hyman Donnenfeld, M.D. (*Pathology*)
 Stanley L. Gibbs, D.D.S.
 Brigitte Graf-Pinthus, D.M.D.
 Dale E. Hopp, D.D.S.
 Janis V. Klavins, M.D. (*Pathology*)
 Nathaniel H. Lenchner, D.D.S.
 George F. Lindig, D.D.S.
 Marvin Mansky, D.D.S.
 Mata K. Nikias, D.D.S., M.P.H., Ph.D.
 Anthony Ricciardi, D.D.S.
 Howard J. Ruderman, D.D.S.
 Kenneth L. Siegel, D.D.S.
 David Spain, M.D. (*Pathology*)
 Spyros M. Vratsanos, Ph.D.

SPECIAL LECTURERS

Lester R. Cahn, D.D.S. (*Pathology*)
 David Cowen, M.D. (*Pathology*)
 C. Zent Garber, M.D. (*Pathology*)
 Raffael Lattes, M.D., Med. Sc.D.
 (*Pathology*)
 Abner Wolf, Ph.D. (*Pathology*)
 Edward V. Zegarelli, D.D.S., M.S.

SENIOR STAFF ASSOCIATE

Valerie J. Cooke, M.S.

STAFF ASSOCIATES

Georgette M. Maietti, M.S.
 Charles C. Marboe, M.D. (*Pathology*)
 Tuan Duc Pham, Ph.D. (*Anatomy*)
 Gladys Teitelman de Pinczuk, Ph.D.
 (*Anatomy*)

ASSISTANT

Harry Smiley, D.D.S.

The Presbyterian Hospital Dental Service

DIRECTOR: Allan J. Formicola

CONSULTANTS: Carl R. Oman, Solomon N. Rosenstein, Albin R. Seidel, Edward V. Zegarelli

ATTENDING DENTAL SURGEONS: Edward A. Cain, Jr., Nicholas A. DiSalvo, Solon A. Ellison, Robert Gottsegen, Sidney L. Horowitz, Joseph Leavitt, Louis J. Loscalzo, John J. Lucca, Irwin D. Mandel, Louis Mandel, George A. Minervini, Melvin L. Moss, Irving J. Naidorf

ASSOCIATE ATTENDING DENTAL SURGEONS: Harold Baumash, Roy Boelstler, Sebastian A. Bruno, Stanislaw H. Brzustowicz, Victor S. Caronia, Kourken A. Daglian, David Kaplan, Bert Klatskin, Austin H. Kutscher, John Kirk Lind, Joseph J. Marbach, Michael Z. Marder, S. Abel Moreinis, Melvin L. Morris, Henry I. Nahoum, John D. Piro, Steven M. Roser, Arnold Rosenberg, Fred Rothenberg, Daniel D. Schube, Murray Schwartz, Steven S. Scrivani, Boaz M. Shattan, Julius Tarshis, Ennio L. Uccellani, Bernard Wasserman, Stephen Wotman, David J. Zegarelli

ASSISTANT ATTENDING DENTAL SURGEONS: Jacob Abelson, Jerome Bartwink, John I. Cardillo, Thomas J. Cleary, Mark S. Cohen, Martin J. Davis, Joseph A. DeJulia, John V. Donovan, Gerald M. Drew, Daniel Fine, Robert Gabriele, Mary L. George, Steven J. Goldberg, Harriet S. Goldman, Robert S. Goldman, Alvin J. Grayson, Wesley Halpert, Ian Yung-Cheng Hu, Paul R. Kamen, Robert A. Koweek, David M. Kritchman, Eugene P. LaSota, Joseph Luban, Guy D. Metcalf, Dennis N. Morea, Herbert Ostreicher, Paul N. Rogow, Steven N. Rosenberg, Marc A. Rosenblum, Louis I. Rubins, Morton J. Stern, Robert N. Stuchell, Dante M. Torrese, John R. Varoscak, Bertram J. Weissman, Maxwell Widrow, Jerome A. Zane, Albert N. Zengo

ASSISTANT DENTISTS: Todd Berman, Michael Goldberg, Gary W. Stern





Academic Calendar, 1981-1982, 1982-1983

Major Religious Holidays

For a statement of University policy regarding religious holidays and applicable dates for this academic year, see *Registration, Expenses, and Financial Aid*—Religious Holidays.

Autumn Term 1981

A **late fee** must be paid by students who apply or reapply **after Monday, August 3**, for October degrees and certificates; **after Friday, November 6**, for January degrees and certificates.

AUGUST

3 Monday. Last day to apply for October degrees and certificates (see September 10).

SEPTEMBER

1-2 Tuesday-Wednesday.* Registration for the academic year for first- and second-year D.D.S. degree candidates.

2-4 Wednesday-Friday. First-year Class Orientation, Class of 1985, D.D.S. degree candidates.

3-4 Thursday-Friday.* Registration for students in the Division of Dental Hygiene.

7 **Monday. Labor Day. University holiday.**

8 Tuesday. Classes begin for students in the Division of Dental Hygiene. First term begins for first- and second-year D.D.S. degree candidates.

9 Wednesday.* Registration for the academic year for first-year students in the postdoctoral orthodontics program.

10 Thursday. First term begins for first-year postdoctoral orthodontics students. Last day to file late application for October degrees and certificates.

10-11 Thursday-Friday.* Registration for the academic year for third- and fourth-year D.D.S. degree candidates.

14 Monday. Classes begin for third- and fourth-year D.D.S. degree candidates. First day to change programs and to apply to audit courses.

16 Wednesday.* Registration for the academic year for all students in the postdoctoral programs (except for first-year orthodontics students).

17 Thursday. First term begins for all students in the postdoctoral programs (except for first-year postdoctoral orthodontics students).

18 Friday. Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**

*Students allowed to register after the period specified must pay a late fee.

OCTOBER

28 Wednesday. Award of October degrees and certificates.

NOVEMBER

2 Monday. Academic holiday for students in the Division of Dental Hygiene.

3 Tuesday. Election Day. University holiday.

6 Friday. Last day to apply or reapply for all January degrees and certificates (see December 11).

7 Saturday. Application deadline for National Boards of December 7-8.

19 Thursday. Last day to drop individual courses for students in the Division of Dental Hygiene.

20 Friday. End of classes for third- and fourth-year D.D.S. degree candidates.

23 Monday. Classes begin for third- and fourth-year D.D.S. degree candidates.

26-29 Thursday-Sunday. Thanksgiving holidays for all students in all programs.

DECEMBER

7-8 Monday-Tuesday. National Board Examinations.

10 Thursday. Optional early registration for the spring term 1982 for students in the Division of Dental Hygiene.

11 Friday. Last day to file late application for January degrees and certificates.

14 Monday. Classes end for students in the Division of Dental Hygiene.

15-21 Tuesday-Monday. Examination week for students in the Division of Dental Hygiene.

19 Saturday, through January 3, 1982, Sunday. Winter holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.

22 Tuesday, through January 14, 1982, Thursday. Winter holidays for students in the Division of Dental Hygiene.

Spring Term 1982

A **late fee** must be paid by students who apply or reapply **after Monday, February 22**, for May degrees and certificates.

JANUARY

8 Friday. First term ends for first- and second-year D.D.S. degree candidates.

11 Monday. Second term begins for first- and second-year D.D.S. degree candidates.

14 Thursday. Second term begins for all postdoctoral students.

JANUARY

- 15 Friday.* Registration for students in the Division of Dental Hygiene.
- 18 Monday. Classes begin for students in the Division of Dental Hygiene.
- 27 Wednesday. Award of January degrees and certificates.
- 28 Thursday. First day to change programs and to apply to audit courses.

FEBRUARY

- 3 Wednesday. Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**
- 15 **Monday. Washington's Birthday. Academic holiday.**
- 19 Friday. Classes end for third- and fourth-year D.D.S. degree candidates.
- 22 Monday. Classes begin for third- and fourth-year D.D.S. degree candidates. Last day to apply or reapply for all May degrees and certificates (see April 1).
- 27 Saturday. Application deadline for National Boards of March 29-30.

MARCH

- 7 Sunday. Annual Commemoration Service in St. Paul's Chapel.
- 14-21 **Sunday-Sunday. Spring holidays for students in the Division of Dental Hygiene.**
- 25 Thursday. Last day to drop individual courses for students in the Division of Dental Hygiene.
- 29 Monday. National Board Examination for Dental Hygiene students.
- 29-30 Monday-Tuesday. National Board Examinations, D.D.S. Class of 1985.

APRIL

- 1 Thursday. Last day to file late application for May degrees and certificates.
- 10-18 **Saturday-Sunday. Spring holidays for second-, third, and fourth-year D.D.S. degree candidates.**
- 10-25 **Saturday-Sunday. Spring holidays for first-year D.D.S. degree candidates.**

MAY

- 3 Monday. Classes end for students in the Division of Dental Hygiene.
- 4-5 Tuesday-Wednesday. Study days for students in the Division of Dental Hygiene.
- 6-12 Thursday-Wednesday. Examination week for students in the Division of Dental Hygiene.
- 7 Friday. Classes end for fourth-year D.D.S. degree candidates.

**Students allowed to register after the period specified must pay a late fee.*



Commencement 1982

MAY

- 16 Sunday. Baccalaureate service.
- 19 **Wednesday. Conferral of May degrees and certificates.**
- 20 Thursday. Conferring of awards, School of Dental and Oral Surgery.

Summer Session 1982

MAY

- 20 Thursday. Summer session begins for postdoctoral orthodontics students.
- 21 Friday. Classes end for third-year D.D.S. degree candidates. Second term ends for second-year D.D.S. degree candidates.
- 24 Monday. Summer Sessions II and III begin.
- 31 **Monday. Memorial Day. University holiday.**

JUNE

- 4 Friday. Second term ends for first-year D.D.S. degree candidates.
- 12 Saturday. Application deadline for National Board Examinations of July 12-13.
- 23 Wednesday. Second term ends for second-year postdoctoral students.

JULY

- 12-13 Monday-Tuesday. National Board Examinations.
- 16 Friday. End of Summer Sessions II and III.

Autumn Term 1982

A **late fee** must be paid by students who apply or reapply **after Monday, August 2**, for October degrees and certificates; **after Friday, November 5**, for January degrees and certificates.

AUGUST

2 Monday. Last day to apply for October degrees and certificates (see September 9).

31 Tuesday, through September 1, Wednesday.* Registration for the academic year for first- and second-year D.D.S. degree candidates.

SEPTEMBER

1-3 Wednesday-Friday. Freshman Class Orientation, Class of 1986, D.D.S. degree candidates.

6 **Monday. Labor Day. University holiday.**

7 Tuesday.* Registration for students in the Division of Dental Hygiene. First term begins for first- and second-year D.D.S. degree candidates.

8 Wednesday.* Registration for the academic year for first-year students in the postdoctoral orthodontics program. Classes begin for students in the Division of Dental Hygiene.

9 Thursday. First term begins for first-year postdoctoral orthodontics students. Last day to file late application for October degrees and certificates.

9-10 Thursday-Friday.* Registration for the academic year for third- and fourth-year D.D.S. degree candidates.

13 Monday. Classes begin for third- and fourth-year D.D.S. degree candidates. First day to change programs and to apply to audit courses.

17 Friday.* Registration for the academic year for all students in the postdoctoral programs (except for first-year orthodontics students). Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**

20 Monday. First term begins for all students in the postdoctoral programs (except for first-year postdoctoral orthodontics students).

OCTOBER

27 Wednesday. Award of October degrees and certificates.

NOVEMBER

1 **Monday. Academic holiday for students in the Division of Dental Hygiene.**

2 **Tuesday. Election Day. University holiday.**

5 Friday. Last day to apply or reapply for all January degrees and certificates (see December 10).

*Students allowed to register after the period specified must pay a late fee.

NOVEMBER

- 6 Saturday. Application deadline for National Boards of December 6-7.
- 18 Thursday. Last day to drop individual courses for students in the Division of Dental Hygiene.
- 19 Friday. End of classes for third- and fourth-year D.D.S. degree candidates.
- 22 Monday. Second term begins for third- and fourth-year D.D.S. degree candidates.
- 25-28 **Thursday-Sunday. Thanksgiving holidays for all students in all programs.**

DECEMBER

- 6-7 Monday-Tuesday. National Board Examinations.
- 9 Thursday. Optional early registration for the spring term 1983 for students in the Division of Dental Hygiene.
- 10 Friday. Last day to file late application for January degrees and certificates.
- 14 Tuesday. Classes end for students in the Division of Dental Hygiene.
- 15-21 Wednesday-Tuesday. Examination week for students in the Division of Dental Hygiene.
- 18 **Saturday, through January 2, 1983, Sunday. Winter holidays for D.D.S. degree candidates and for all students in the postdoctoral programs.**
- 22 **Wednesday, through January 13, 1983, Thursday. Winter holidays for students in the Division of Dental Hygiene.**

Spring Term 1983

A **late fee** must be paid by students who apply or reapply **after Monday, February 21**, for May degrees and certificates.

JANUARY

- 7 Friday. First term ends for first- and second-year D.D.S. degree candidates.
- 10 Monday. Second term begins for first- and second-year D.D.S. degree candidates.
- 13 Thursday. Second term begins for all postdoctoral students.
- 14 Friday.* Registration for students in the Division of Dental Hygiene.
- 17 Monday. Classes begin for students in the Division of Dental Hygiene.
- 26 Wednesday. Award of January degrees and certificates.
- 27 Thursday. First day to change programs and to apply to audit courses.

*Students allowed to register after the period specified must pay a late fee.

FEBRUARY

- 2 Wednesday. Last day to change programs and to apply to audit courses. **No adjustment of fees for individual courses dropped after this date.**
- 18 Friday. Classes end for third- and fourth-year D.D.S. degree candidates.
- 21 **Monday. Washington's Birthday observed. Academic holiday.** Last day to apply or reapply for all May degrees and certificates (see April 1).
- 22 Tuesday. Classes begin for third- and fourth-year D.D.S. degree candidates.
- 26 Saturday. Application deadline for National Boards of March 28-29.

MARCH

- 6 Sunday. Annual Commemoration Service in St. Paul's Chapel.
- 13-20 **Sunday-Sunday. Spring holidays for students in the Division of Dental Hygiene.**
- 21 Monday. National Board Examination for Dental Hygiene students.
- 24 Thursday. Last day to drop individual courses for students in the Division of Dental Hygiene.
- 28-29 Monday-Tuesday. National Board Examinations, D.D.S. Class of 1986.

APRIL

- 1 Friday. Last day to file late application for May degrees and certificates.
- 9-17 **Saturday-Sunday. Spring holidays for second-, third-, and fourth-year D.D.S. degree candidates.**
- 9-24 **Saturday-Sunday. Spring holidays for first-year D.D.S. degree candidates.**

MAY

- 2 Monday. Classes end for students in the Division of Dental Hygiene.
- 3-4 Tuesday-Wednesday. Study days for students in the Division of Dental Hygiene.
- 5-11 Thursday-Wednesday. Examination week for students in the Division of Dental Hygiene.
- 6 Friday. Classes end for fourth-year D.D.S. degree candidates.

Commencement 1983**MAY**

- 15 Sunday. Baccalaureate Service.
- 18 Wednesday. Conferral of May degrees and certificates.
- 19 Thursday. Conferring of awards, School of Dental and Oral Surgery.

Summer Session

MAY

- 19 Thursday. Summer Session begins for postdoctoral orthodontics students.
- 20 Friday. Classes end for third-year D.D.S. degree candidates. Second term ends for second-year D.D.S. degree candidates.
- 23 Monday. Summer Sessions II and III begin.
- 30 **Monday. Memorial Day. University holiday.**

JUNE

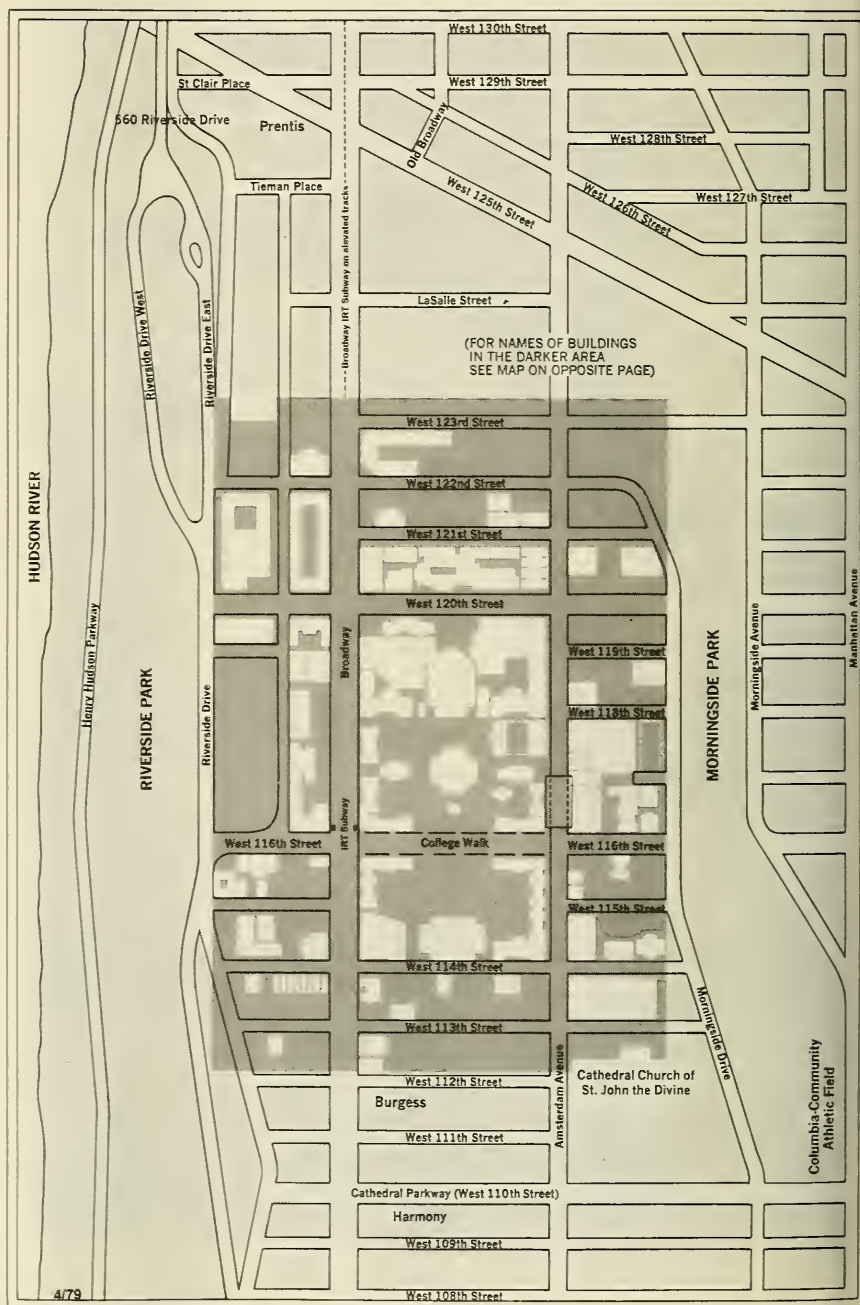
- 3 Friday. Second term ends for first-year D.D.S. degree candidates.
- 11 Saturday. Application deadline for National Board Examinations of July 11-12.
- 22 Wednesday. Second term ends for second-year postdoctoral students.

JULY

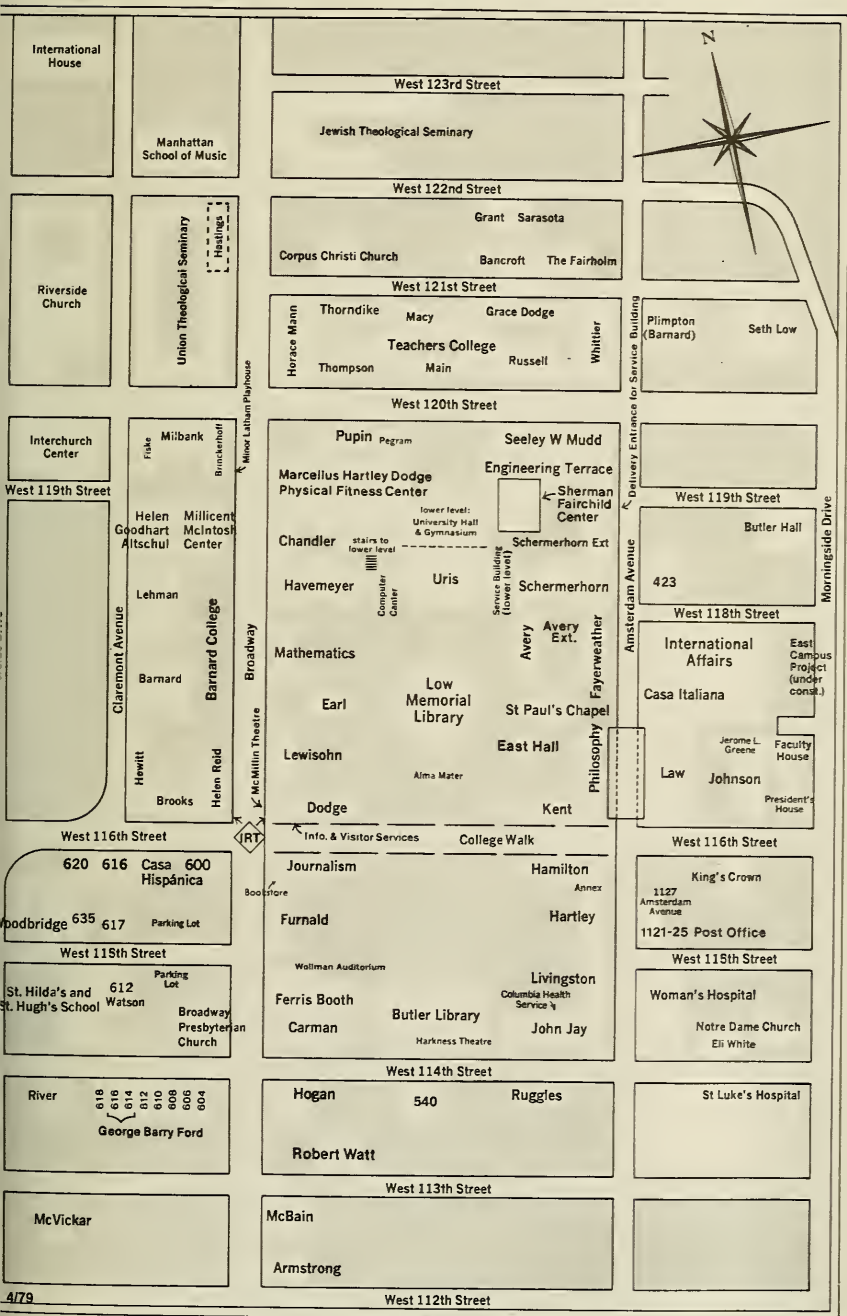
- 4 **Monday. Independence Day. University holiday.**
- 11-12 Monday-Tuesday. National Board Examinations.
- 15 Friday. End of Summer Sessions II and III.



The Morningside Heights Area of New York City



The Morningside Campus & Environs



ATTACH
PHOTOGRAPH
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The admission and registration of the undersigned, if granted pursuant to this application, and his or her continuance upon the rolls are subject to all rules and regulations set forth in the Statutes of the University, the Bulletin of the School of Dental and Oral Surgery, and other announcements of the University.

I hereby certify that the information given in this application is complete and accurate.

Signature of Applicant

Date

(All entering students will be required to have complete physical examination after acceptance.)

(Not to be filled in by applicant)

Subject	Entrance Requirement (points)	PRELIMINARY REPORT OF STATUS			FINAL REPORT
		Number of Points		Unfulfilled Requirements (not otherwise listed)	Completed
		Completed	For Which Now Registered		
Chemistry	4				
Sociology	3				
Psychology	3				
Speech	2-3				
English	4				
Biology	4				
No. of points					
Average grade					

Interview: Notified

Reported

Accepted

Rejected

☐

Requirements	Interview	Recommendations	Scholarship	Tests
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Basis of Admission:

COMMITTEE ON ADMISSIONS FOR DENTAL HYGIENE

Chairman

Columbia University in the City of New York

DIVISION OF DENTAL HYGIENE
630 West 168th Street
New York, N.Y. 10032

PRIMARY APPLICATION FOR ADMISSION TO THE DIVISION OF DENTAL HYGIENE

☐ PROGRAM A ☐ PROGRAM B ☐ M.S. DEGREE PROGRAM

Please complete this form accurately and return it to the above address. The remainder of the admission forms will be sent to you.

This application must be accompanied by a check or money order for \$35 payable to Columbia University. This fee is to help cover the expenses incident to evaluation of your credentials and is not returnable.

Name _____ to enter September, 19_____
Last name First name Middle name

Present mailing address _____ Tel. No. _____
Street and number City State ZIP Code

Permanent home address _____ Tel. No. _____
Street and number City State ZIP Code

Closest relative _____
Give full name, address, telephone number, and relationship

Date of birth _____ Soc. Sec. No. _____

Are you a citizen of the United States? _____

From what source did you learn about the dental hygiene programs at Columbia University? _____

Please give below a complete statement of schools and colleges attended:

NAME OF INSTITUTION	LOCATION	Dates of Attendance	GRADUATED		
			Degree or Diploma	Month	Year
Secondary Schools					
Colleges					
Graduate and Professional Schools					

If now registered, for what degrees are you a candidate? _____ Major subject _____

Date of anticipated degree _____

If you were registered in any of the above institutions under any variations of your name as it appears on this application, please give such names here. (Affidavit will be requested when necessary.)

Since admission to college, have you been on probation, suspended, or dismissed for reasons of scholastic standing or been subject to disciplinary action?

_____ If so, state particulars _____

State briefly your goals in dentistry, why you selected this advanced training program, why this specialty, and why Columbia. Your narrative should be direct and succinct, and should not exceed 200 words.

Columbia University in the City of New York

SCHOOL OF DENTAL AND ORAL SURGERY
630 West 168th Street
New York, N.Y. 10032

APPLICATION FOR ADMISSION WITH ADVANCED STANDING (Continued)

All applicants must supply a brief essay on their goals in dentistry and in advanced training at Columbia. See the reverse side of this page.

Four letters of recommendation are to be sent directly to the Program Director: one from the Dean of your Dental School, one from another faculty member, and two from other professional colleagues. List below the individuals who will submit references:

	NAME IN FULL	ADDRESS
1.		
2.		
3.		
4.		

ATTACH
PHOTOGRAPH
HERE

The admission and registration of the undersigned, if granted pursuant to this application, and his or her continuance upon the rolls are subject to all rules and regulations set forth in the Statutes and announcements of the University.

I hereby certify that the information given in this application is complete and accurate.

Signature of Applicant

Date of Filing _____

DO NOT WRITE BELOW THIS LINE

Recommended by the Committee on Admissions	Interview	Date	Comments
Chairman _____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Date _____	_____	_____	_____

Institutional Training

Intern, Extern, or Resident	Name of Institution	Location	Length of Service (in years)	Dates of Service	Type of Service
				from to	
				from to	

Advanced Courses (graduate or postgraduate work following graduation from dental school):

Course Title	Name of Institution	Location	Length of Course (wks., mos., yrs.)	Dates of Attendance	Description of Course
				from to	
				from to	
				from to	

Personal interviews are invited only upon individual decision of the divisional admission committee. When interview is desired, candidate will be contacted after application documentation is complete.

Teaching or Research Experience:

Subject	Number of Years	Dates	Name of Institution	Location
		from to		
		from to		

Dental License:

State or country

Number

Year issued

Evidence of current registration must be sent to the Committee on Postgraduate Admissions

Dental Practice:

Address (Street and Number, City and State or Country)	Number of Years in Practice	Type of Practice: How much Surgery, Prosthetics, Periodontia, Pedodontics, etc.
Tel. No.		

Membership in Dental Societies:

Name of Society	Location (City and State or Country)	Offices Held and Years in Office

Please list other professional or educational activities not mentioned above, including scientific, literary, or clinical contributions to dentistry:

(Attach continuation pages as required.)

If you are now or if you have been in private practice, please have the Secretary of your local dental society send us a statement of your good standing in that society.

What type of professional activity do you plan to engage in after completing this course? _____

Where? _____

Columbia University in the City of New York

SCHOOL OF DENTAL AND ORAL SURGERY
630 West 168th Street
New York, N.Y. 10032

APPLICATION FOR ADMISSION WITH ADVANCED STANDING TOWARD THE D.D.S. DEGREE

This four-page application form, when returned to this office, should be accompanied by a check or money order for \$35 payable to Columbia University. This fee is to help cover the expenses incident to evaluation of your credentials and is not returnable.

Name _____ to enter _____
Last name First name Middle name

Present mailing address _____ Tel. No. _____
Street and number City State ZIP Code Country

Present professional activity _____
Title, rank or description

Organization Address Tel. No. _____

Present home address _____ Tel. No. _____
Street and number City State ZIP Code Country

Date of birth _____ Soc. Sec. No. _____ Marital status _____

Give name and address of spouse _____

Number of children _____ Are you a citizen of the United States? _____

Have you had any serious illness? _____ If so, what? _____
 _____ When? _____

Have you served in the federal services? _____ If so, when and for how long? _____

In what capacity and which service? _____

Have you applied for admission to Columbia University previously? _____ If so, School _____ Date _____

Have you been a student in Columbia University previously? _____ If so, School _____ Date _____

Please give below a complete statement of schools and colleges attended:

NAME OF INSTITUTION	LOCATION	Dates of Attendance	Degree or Diploma	Month	Year
Colleges _____					
Graduate and Professional Schools _____					

If now registered, for what degrees are you a candidate? _____ Major subject _____

If you were registered in any of the above institutions under any variations of your name as it appears on this application, please give such names here. (Affidavit will be requested when necessary.) _____

Please request your college and professional schools to forward transcripts of your record to the address below.

Please submit 2x2 photo and attach to space provided on Page 3.

Please have the American Dental Association send us your National Board records (if available).

Return this application to the Chairman, Committee on Admissions, Columbia University, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032.

State briefly your goals in dentistry, why you selected this advanced training program, why this specialty, and why Columbia. Your narrative should be direct and succinct, and should not exceed 200 words.

Columbia University in the City of New York

SCHOOL OF DENTAL AND ORAL SURGERY
630 West 168th Street
New York, N.Y. 10032

APPLICATION FOR ADMISSION TO POSTDOCTORAL PROGRAMS (Continued)

All applicants must supply a brief essay on their goals in dentistry and in advanced training at Columbia. See the reverse side of this page.

Four letters of recommendation are to be sent directly to the Program Director: one from the Dean of your Dental School, one from another faculty member, and two from other professional colleagues. List below the individuals who will submit references.

	NAME IN FULL	ADDRESS
1.		
2.		
3.		
4.		

State the Program for which you are applying (Check one):

Certificate of Training in Endodontics ☐ Orthodontics ☐ Pedodontics ☐ Periodontics ☐

ATTACH
PHOTOGRAPH
HERE

The admission and registration of the undersigned, if granted pursuant to this application, and his or her continuance upon the rolls are subject to all rules and regulations set forth in the Statutes and announcements of the University.

I hereby certify that the information given in this application is complete and accurate.

Signature of Applicant

Date of Filing _____

DO NOT WRITE BELOW THIS LINE

Recommended by the Committee on Admissions	Interview	Date	Comments
Chairman			
Date _____			

Institutional Training

Intern, Extern, or Resident	Name of Institution	Location	Length of Service (in years)	Dates of Service	Type of Service
				from to	
				from to	

Advanced Courses (graduate or postgraduate work following graduation from dental school):

Course Title	Name of Institution	Location	Length of Course (wks., mos., yrs.)	Dates of Attendance	Description of Course
				from to	
				from to	
				from to	

Personal interviews are invited only upon individual decision of the divisional admission committee. When interview is desired, candidate will be contacted after application documentation is complete.

Teaching or Research Experience:

Subject	Number of Years	Dates	Name of Institution	Location
		from to		
		from to		

Dental License:

State or country

Number

Year issued

Evidence of current registration must be sent to the Committee on Postgraduate Admissions.

Dental Practice:

Address (Street and Number, City and State or Country)	Number of Years in Practice	Type of Practice: How much Surgery, Prosthetics, Periodontia, Pedodontics, etc.

Tel. No.

Membership in Dental Societies:

Name of Society	Location (City and State or Country)	Offices Held and Years in Office

Please list other professional or educational activities not mentioned above, including scientific, literary, or clinical contributions to dentistry:

(Attach continuation pages as required.)

If you are now or if you have been in private practice, please have the Secretary of your local dental society send us a statement of your good standing in that society.

What type of professional activity do you plan to engage in after completing this course? _____

Where? _____

Columbia University in the City of New York

SCHOOL OF DENTAL AND ORAL SURGERY
630 West 168th Street
New York, N.Y. 10032

APPLICATION FOR ADMISSION TO POSTDOCTORAL PROGRAMS LEADING TO A CERTIFICATE OF TRAINING IN *(check one)*

☐ ENDODONTICS ☐ ORTHODONTICS ☐ PEDODONTICS ☐ PERIODONTICS

This four-page application form, when returned to this office, should be accompanied by a check or money order for \$35.00 payable to Columbia University. This fee is to help cover the expenses incident to evaluation of your credentials and is not returnable.

Answer all questions accurately and in detail and return this application to Program Director of the discipline to which you are applying. (Endodontics, Orthodontics, Pedodontics, or Periodontics), Columbia University, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032.

Name _____ to enter _____
Last name First name Middle name

Present mailing address _____ Tel. No. _____
Street and number City State ZIP Code Country

Present professional activity _____ Title, rank or description

_____ Tel. No. _____
Organization Address

Present home address _____ Tel. No. _____
Street and number City State ZIP Code Country

Date of birth _____ Soc. Sec. No. _____ Marital status _____

Give name and address of spouse _____

Number of children _____ Are you a citizen of the United States? _____

Have you had any serious illness? _____ If so, what? _____

_____ When? _____

Have you served in the federal services? _____ If so, when and for how long? _____

In what capacity and which service? _____

Have you applied for admission to Columbia University previously? _____ If so, School _____ Date _____

Have you been a student in Columbia University previously? _____ If so, School _____ Date _____

Please give below a complete statement of schools and colleges attended:

NAME OF INSTITUTION	LOCATION	Dates of Attendance	Degree or Diploma	Month	Year
Colleges					
Graduate and Professional Schools					

If now registered, for what degrees are you a candidate? _____ Major subject _____

If you were registered in any of the above institutions under any variations of your name as it appears on this application, please give such names here. (Affidavit will be requested when necessary.) _____

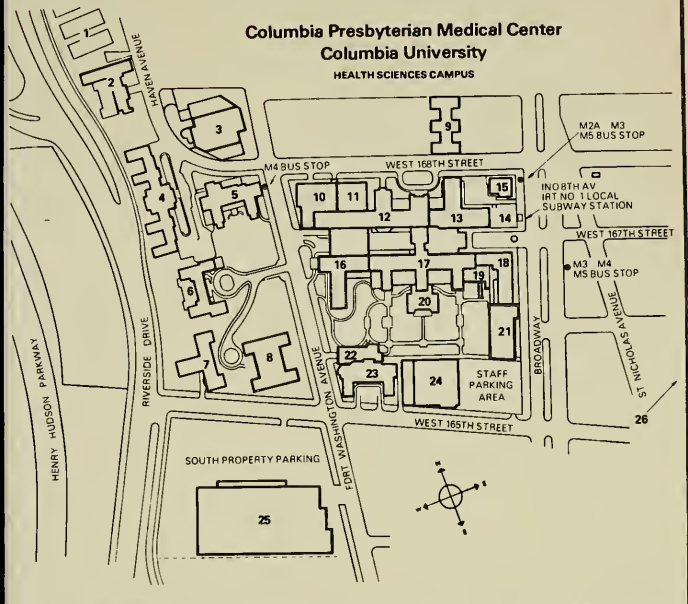
Please request your college and professional schools to forward transcripts of your record to the Program Director of the discipline to which you are applying (Endodontics, Orthodontics, Pedodontics, Periodontics), Columbia University, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032. (Transcripts must be sent directly from the college and not by the applicant.)

Please submit 2x2 photo and attach to space provided on Page 3.

Please have the American Dental Association send us your National Board records.

COLUMBIA UNIVERSITY BULLETIN

Columbia Presbyterian Medical Center Columbia University HEALTH SCIENCES CAMPUS



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|--|--|--|
| 1 Alumni Auditorium | 13 School of Dental and Oral Surgery | 6 Anna C. Maxwell Hall, School of Nursing Residence |
| 3 Augustus Long Library | 9 Georgian Nurses Residence | 5 The Neurological Institute of New York |
| 8 Dana W. Atchley Pavilion | 22 Edward S. Harkness Eye Institute | 6 School of Nursing |
| 8 The Babies Hospital | 23 Eye Institute Research Laboratories | 25 Parking facilities |
| 21 Babies Hospital Research, Teaching, and Office Addition | 7 Harkness Memorial Hall | 17 Presbyterian Hospital New York Orthopedic Hospital
Sloane Hospital for Women
Squier Urological Clinic |
| 2 Bard Hall Medical Student Residence | 16 Harkness Pavilion | 4 New York State Psychiatric Institute |
| 1 Bard Haven Towers | 20 Pauline A. Hartford Memorial Chapel | 4 Psychoanalytic Clinic |
| 10 William Black Medical Research Building | 3 Julius and Armand Hammer Health Sciences Center | 15 School of Public Health |
| 3 Cancer Center/Institute of Cancer Research | 3 Institute of Human Nutrition | 19 Radiotherapy Center |
| 24 Central Service Building | 2/12 International Institute for the Study of Human Reproduction | 13 Vanderbilt Clinic |
| 12 College of Physicians and Surgeons | | 14 Vanderbilt Clinic Addition |
| 26 Center for Community Health Systems | | |



